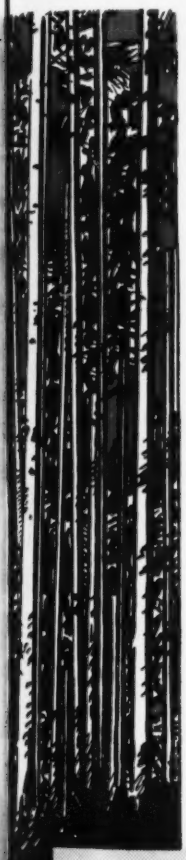
PAPER TRADE JOURNAL

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD



FINLAND
WOOD PULPS

FINLAND SUOMI

ANNUAL PRODUCTION	CHEMICAL PULP	Approximate	1,250,000 TONS
	MECHANICAL PULP		650,000 TONS

UNBLEACHED SULPHITE

AHLSTROM	NOKIA
EKLOF	KAJAANI
ENSO	KEMI
GAS	RAUMA
HACKMAN	TORNATOR
WALKIAKOSKI	VL
JAKOBSTAD	TOPPILA
LASKELA	KUUSANKOSKI

Finnish Cellulose Association — Finnish Wood Pulp Union
Exclusive Sales Agents for U. S. A.
LAGERLOEF TRADING COMPANY, INC.
52 VANDERBILT AVE., NEW YORK CITY

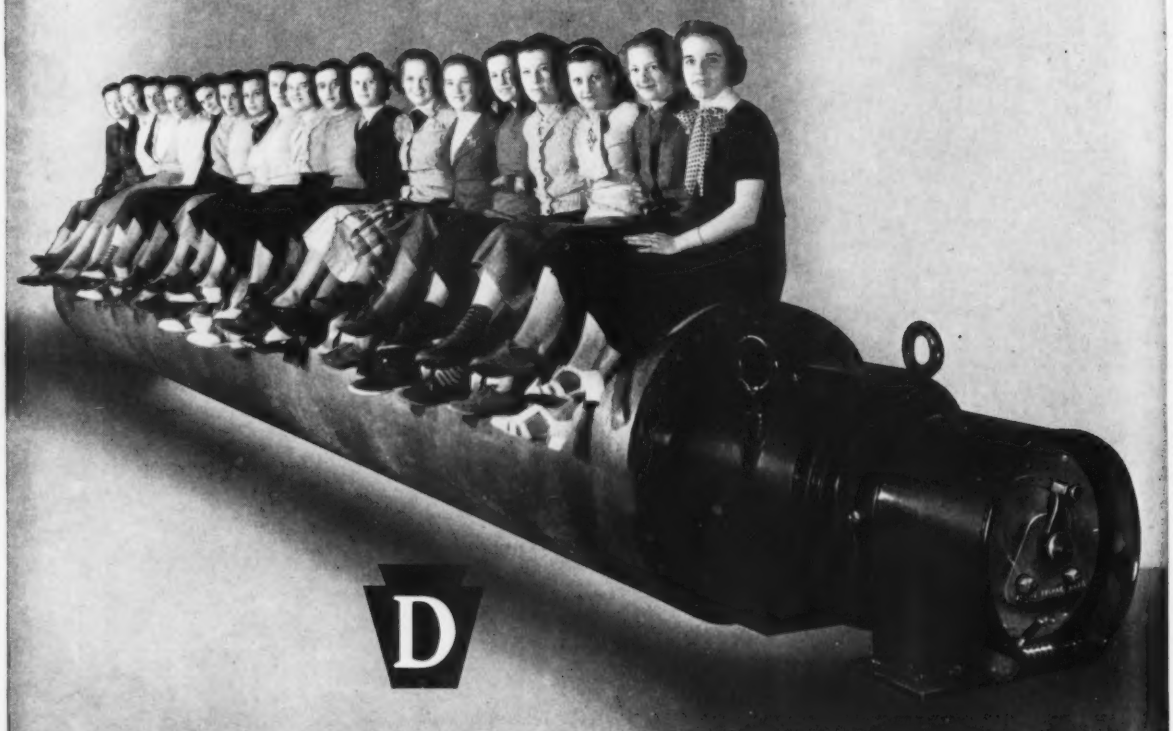
SEPT. 16 1937

Vol. CV
No. 12

66th Year

DOWNINGTOWN

Perspective is baffling and sometimes misleading, therefore to give you an exact idea of the size of this 40 inch by 250 inch Downingtown Suction Press Roll, we asked a group of our local high school girls to pose for you . . . No matter how large or how small your machine may be, we can supply modern Suction Press, Couch, Felt or Drum Press Rolls . . . Send for Catalog. Downingtown Manufacturing Company, Downingtown, Pennsylvania.



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OLDEST MANUFACTURER OF MODERN SUCTION ROLLS

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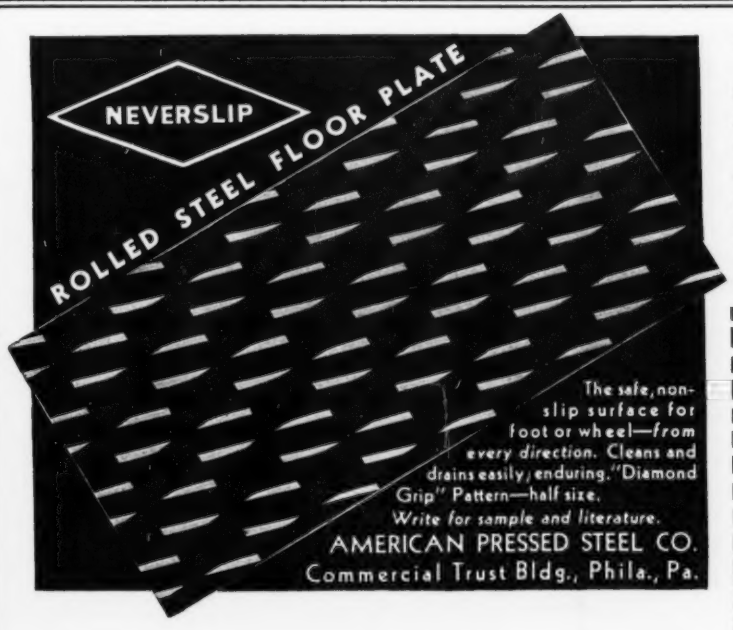
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With widely separated units — ports on the Gulf and in the Caribbean, branches throughout the mid-west and eastern United States — Lykes Brothers Steamship Company faced a real co-ordination problem. Bell System Teletypewriter Service helped solve it simply and profitably.

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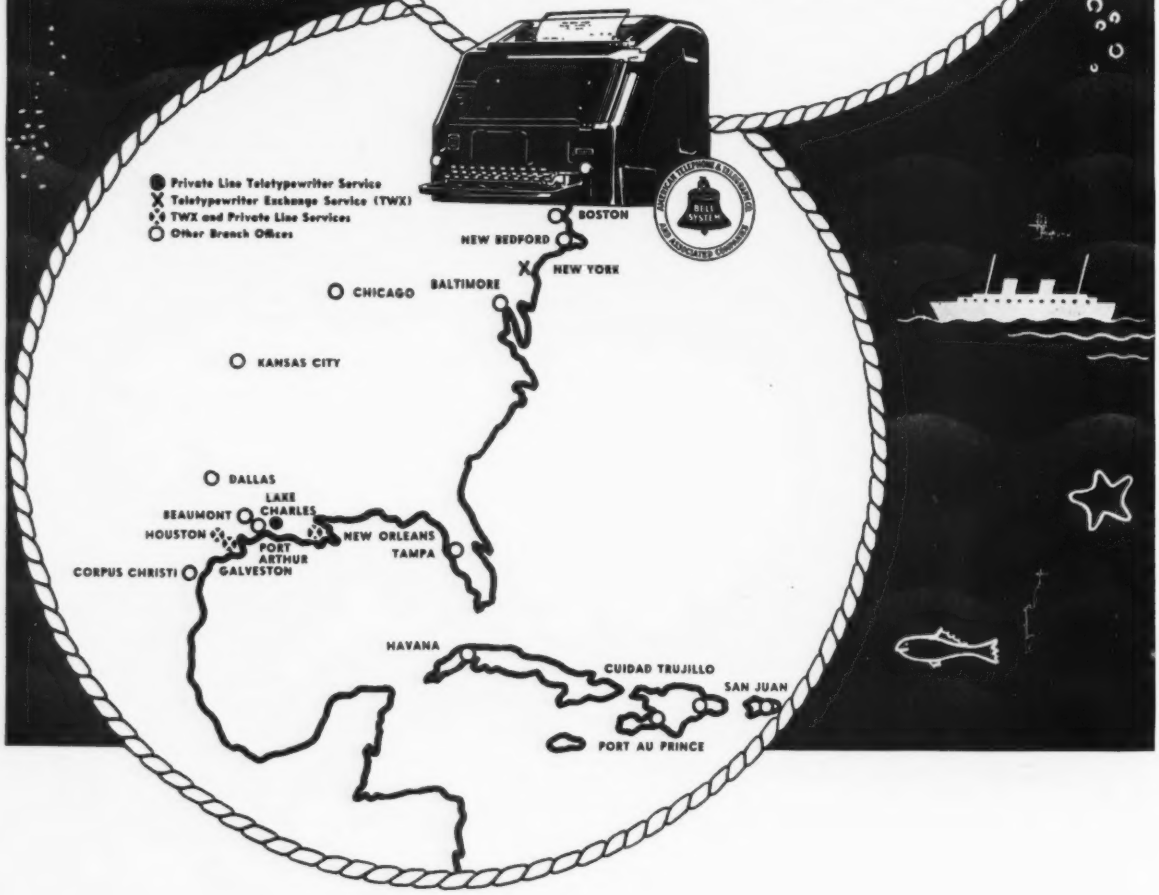


PAPER TRADE JOURNAL
Reg. U. S. Pat. Off.
SIXTY-SIXTH YEAR
PAPER
Established Feb. 17, 1899
Consolidated Nov. 16, 1899
with PAPER TRADE JOURNAL.
Vol. CV, No. 12 Thursday, September 16, 1937
Established Sept. 21, 1918
Consolidated Feb. 19, 1925
with PAPER TRADE JOURNAL.

Wisconsin Paper Group Issues Data Book

Non-Profit Organization of Mills and Converting Plants Supply Jobbers With Useful Production Facts—International Brotherhood Will Attempt to Unionize All Mills — Industrial Commission Hears Compensation Cases.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., Sept. 13, 1937—Paper jobbers throughout the country are being supplied with a new data book published by the Wisconsin Paper Group, a non-profit organization maintained by 29 paper mills and converting plants. The book contains 24 pages, arranged so it is a permanent reference as well as a complete explanation of the system by which L. C. L. shipments are cleared through the administration office at Neenah, Wis., for pool car delivery, thus giving customers the benefit of carload rates.

Featured in the publication are pictures of the loading warehouse at Neenah to which small shipments are delivered by rail and truck for pool cars, the offices and personnel, and a map showing the convenient proximity of the plants for rendering this money-saving service.

Reference lists are included showing the member mills and converting plants, the products made by each, a classified list of products and the plant where each is manufactured, and an alphabetical list of trade names of all products.

It is pointed out in the explanatory pages that 350 distinctly different grades can be obtained from Wisconsin mills, covering almost everything manufactured from paper, and stressing the importance to jobbers of concentrating their purchases in Wisconsin.

During the last fiscal year, the Wisconsin Paper Group shipped 20,915 pool cars to 214 destinations. Shipments aggregating 2,000,000 pounds per week are reported to the Neenah office by the mills, and arrangements are made for the movement of 40 to 50 pool cars per week.

Where one mill has an order for the largest part of a shipment, the car is loaded there and then transferred to the Neenah warehouse for completion of the load. Where the shipments are small, they are all consigned to the pool headquarters, coming either by rail or truck for reloading. An added feature of the system is the loading of all shipments for jobbers in a logical territory. The car is consigned to a reliable warehousing or trucking company, which distributes the shipments to the jobbers there. Regular schedules of pool car movements are maintained so jobbers know when to place orders for their territory.

A reporting system is operated by mail and telephone so the office is aware of all shipments pending daily, and can arrange the assembling. Jobbers also advise the office as to the mills where orders are being placed. Arrangements also have been made with the railroads for stopover privileges for additional loading or unloading without affecting the carload rates. The Group has made savings running into thousands of dollars a year for jobbers, and has made quick turnover possible as against overstocking on slow moving items in order to make freight savings.

Irwin Pearson is manager of the organization. It operates independent of any mill, and all of its records are confidential.

Seek to Unionize All Paper Mills

Unionizing of every paper mill and converting plant in the United States is the goal of the labor organizations, according to a statement made by Raymond Richards of Wisconsin Rapids, Wis., at the Labor Day picnic attended by approximately 1,500 workers at Menasha, Wis. Mr. Richards is vice-president of the Wisconsin Federation of Labor.

Addresses also were made at the Menasha picnic and at Kaukauna, Wis. by John P. Burke of Fort Edwards, N. Y., president of the International Brotherhood of Pulp, Sulphite and Paper Mill Workers. He said no unions anywhere have accomplished more than the pulp and paper unions.

"The first convention of pulp and paper unions was held just 36 years ago," said Mr. Burke. "Then they petitioned for a 65-hour week. Since that time, in 36 years of concentrated activity, we have come a long way. Just 21 years ago there was no such thing as a written shop agreement. Now the list is too long to name. Wisconsin agreements are now the model for other industries."

The pulp and paper industry has a particularly fine record among unions, the speaker pointed out, with no serious strikes for years. "Pulp and paper workers have considered written agreements things to live up to," he remarked. "We have a pride in our product, in our safety record, and we let our relations with our employers be guided by good common sense."

Henry Rutz of Madison, Wis., chairman of education of the Wisconsin Federation of Labor, out-

(Continued on page 31)

Demand for Kraft Paper Steadily Increases

Raw Material Scarcity Reported to Offset Production Difficulties In Southern Mills — Interstate Commerce Commission In New Offices — Displays Ready for N.P.T.A. Meeting — New Developments In Board

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., September 13, 1937—The Chicago paper market remained comparatively quiet during the week with indications pointing strongly to the long expected upturn in prices. Local market commentators, again scanning the substantial increases in the cost of doing business, found that demand was slowly improving despite under par business reports and the uncertainty of the foreign situation. There is the growing conviction that certain grades of paper will start the latter part of September to move upward. Krafts continued to occupy a prominent spot in local news, with the raw material scarcity offsetting any real or imaginary consideration of Southern kraft production difficulties. Groundwoods were in fair demand during the week. Newsprint markets held a more healthy tone in response to world-wide reports of a consolidation of gains. The fine paper field was generally little changed. Sulphites were in fair volume. Books and covers held about the same during the week. The board market was reported locally as slightly improved over last week. Waste papers took the spotlight as far as current strengthening was concerned with the mills continuing to show a genuine interest in the growing shortage. The higher grades of waste paper were characterized as steady with white envelope cuttings, in particular, moving to higher ground. News was slightly easier according to local reports.

The improvement in the local waste paper market continues. Increases in mill prices for waste paper, made the greatest advance of all salvage stocks during the week, with increases of $2.00 per ton for Number 1 mixed and for news and an advance of $1.00 for boxboard. Local authorities said the advance represented the need for more stock to provide for the increased mill output. Waste rags took a mild advance for the first time in many weeks, with mills entering the market after having searched "elsewhere" for some time. Waste rags are expected to grow stronger during the coming Fall period. The waste bag market was one of the few salvage lines to show a weakness, reflected in the new markets for the commodity. For the entire waste paper list there was a unanimous observation that mill operations have greatly improved and that supplies are definitely in demand at the present time.

Displays Ready For N.P.T.A. Meeting

Following the announced practice of drawing lots for display rooms at the Fall meeting of the National Paper Trade Association, those planning to exhibit their wares at the three day Chicago meeting, September 21 to 23, settled the problem for the year at a meeting held in Chicago last week. A few of the spaces drawn, and the companies, are as follows: Racquette River Paper Company, 524-A; Orchard Paper Company, 533-534; Central Paper Company, Menasha, 509; Central Paper Company, Muskegon, 500-501; APW Paper Company, 609-A and 612-A; Kalamazoo Vegetable Parchment Paper Company, 556; Hoberg Paper Mills, 600-601; Bay West Paper Company, 504,505 and 507; Nekoosa-Edwards Paper Company, 613 and 656 and the Brown Company, 618-619.

Other Paper Associations Meet

Other convention news calls attention to the fact that the Paper & Twine Club will hold its annual meeting during the N.P.T.A. program, the affair being scheduled as a luncheon meeting in the Boulevard Room of the Hotel Stevens on September 21. A Chicago committee composed of Leo S. Altholz, Earl Beier and F. X. Meiners is in charge of the arrangements which will also usher in a new Chapter from Michigan. The Michigan association was formed late in the summer at a Detroit meeting with Bob Ziegler as the Chairman.

Other Associations, including the Chicago Paper Association, the Western Paper Merchants Association and other groups are also expected to feature sessions during the week with the mid-west division of the Salesmen's Association of the Paper Industry selecting the evening of September 23 and the final event of its annual golf outing for the combined business and pleasure session. Reservations for this popular event indicate a record turnout according to Ralph Burnett, Chairman.

New ICC Offices

Shippers who utilize the interstate commerce offices for information on rates and regulations will note that the offices in Chicago have been removed from 608 South Dearborn street to the old Federal Building at Adams and Clark street. After October 1 all offices will have been centered in the new location according to L. C. Loughry, director of division eight of the bureau of motor carriers.

New Developments In Board Market

Two items of interest to the paper industry and particularly to the corrugated paper divisions are those pertaining to, first, a modified silicate adhesive for corrugated paper board which has just been developed. It can be adjusted to obtain an even penetration into the paper surface and sets at high speeds without extreme heat. The second is a stapling wire in various colors now offering an economical means of dressing up corrugated or fiber board shipping cartons. It is rust-resisting and is made in all standard stapling sizes. Both innovations are featured in the latest issue of Nation's Business and both are expected to further the saleability of the fiber board.

S.A.P.I. Golf Winners

Prize winners at the semi-final golf outing of the Salesmen's Association of the Paper Industry, midwest division, were announced this week by Ralph Burnett, golf chairman. Forty-five salesmen and guests attended the meeting at Park Ridge Country

Club with the following winners listed: low gross, P. H. Oliver, Hobart Paper Company; blind bogey, Robert Whitelaw, Butler Paper Corporation; low net, 17 and under, I. H. Peck, International Paper Company; low net, 18 and over, William Murphy, Graham Paper Company; second low net, Jenks Kuhlmann, guest; third low net, Ed. Sheaffer, Missisquoi Corporation; low putts, George Chellman, Whitaker Paper Company; low net foursome, P. H. Maas, R. M. Weeks, P. H. Oliver and Jim Coy; low putt foursome; Logan Miller, Jenks Kuhlman, Frank Prentiss and Ed. Sheaffer; high gross foursome, E. B. Schmidt, John Wilson, W. R. Grant and Fred Roll.

New Price Lists

In sending out its new price list the Dwight Brothers Paper Company lists four new lines as follows: Gloss Ink Litho, Vellum Envelopes, Crestwood Wedding Announcements and Machine Cut Cards. The price list, printed on Blue Blackstone Bond, 17 x 22-20, contains 143 pages of prices and information on the complete Dwight line of fine and specialty papers. Price list changes were also issued this week by the Swigart Paper Company with loose leaf listings for insertion in the basic Price List issued by the Chicago jobber organization.

New Midland Advertising

The Midland Paper Company division of the Zellerbach Paper Company has recently issued an impressive flier describing Kleerfect and Hyfect, the former a printing paper and the latter a book paper both with "non-glare" features. The broadside reprints what leading authorities on vision say about paper while the inside fold lists the essentials of Kleerfect and Hyfect as adequate strength, opacity, uniformity, proper ink absorption and elimination of two-sidedness in color and finish. The specimen is printed on Kleerfect Super—25x30—70 lb. and a liberal use of color illustrations adds to its attractiveness.

When Business Steps Up

"When Business Steps Up—We'll Get Our Share," says the newest edition of the S. D. Warren series. Issue number three believes that the increasing number of signs limiting hours when salesmen call is a criterion of improved business. It also describes a variety of techniques for presenting descriptions of merchandise in sales demonstration books, catalogs, booklets, sales manuals, broadsides, folders and other forms of printed sales equipment. As usual, the Warren folder is well illustrated and, in this issue in particular, devotes considerable space to steps to be taken by advertisers in developing printed material. The mailing is printed on Warren's Lustro Gloss, folding enamel, white, 35 x 45-133; basis 25 x 38-80. Chicago distributors are the Chicago Paper Company.

Irving McHenry Returns from Abroad

Irving McHenry, president of the Mid-States Gummed Paper Company of Chicago, recently returned from an extended trip abroad, traveling through seven countries. Mr. McHenry combined business with pleasure and was a delegate from Illinois at the International Manufacturers' Association Convention at Berlin, Germany.

WPA Compiles Paper Imports Data

Complete information in regard to imports into the United States of wood and paper in the calendar year 1936 is contained in Volume 3 just issued in a series of four volumes being published by the United States Tariff Commission under the title of "Imports into the United States for Consumption, by Countries."

Work on these volumes is being completed as a project of the Works Progress Administration at Richmond, Va., employing about 135 persons. This same project had previously completed comparative import statistics for the years 1931-1935 inclusive.

"The demand for these statistics," says the Tariff Commission in an introduction to the Volume, "for work connected with the trade agreements program has been so great and the requests received for similar information for 1936 have been so numerous that it is thought best to present the preliminary statistics for this later year in order that they may be available to the Government and the public in advance of their final issue in printed form by the Department of Commerce."

Total imports of wood and paper in 1936 are shown to have amounted to $214,328,000 worth free of duty, and $35,028,000 on the dutiable list.

Imports of chemical wood pulp, duty free, are shown chiefly as follows:

Classification	Tons (2,000 pounds, air-dry weight)	Value
Sulphite, unbleached (including easy bleaching, news grade, strong and Mitscherlich).	786,720	$26,778,644
Sulphite, bleached	512,168	25,824,769
Sulphate, unbleached (kraft pulp)	635,722	19,771,988
Sulphate, bleached	102,375	5,844,031

More than half the unbleached sulphite came from Sweden, imports from Germany and Canada constituting the bulk of the remainder. More than half the bleached sulphite and sulphate came from Canada, while the great bulk of unbleached sulphate came from Sweden.

Imports of duty free standard newsprint paper amounted to 5,503,160,610 pounds, valued at $96,719,470. Of this volume, 4,844,633,841 tons, valued at $86,498,969 came from Canada, while imports from Finland, and from Newfoundland and Labrador, amounted to more than $3,000,000 in value each.

Duties on manufactured paper of many classifications, ranging from 10 to 60 per cent ad valorem, kept down imports, the report shows, except for a few items. Cigarette paper, in bobbins, on which a duty of 60 per cent was collected, was imported, almost wholly from France, to the extent of 5,884,310 pounds, valued at $1,524,267 from January 1 to June 14, 1936. Effective June 15, 1936, the rate was reduced to 45 per cent by the French Reciprocal Trade Agreement and the imports from June 15 to December 31, 1936, amounted to 9,027,679 pounds, valued at $2,288,431.

The volume contains a complete index for all the items of wood and paper classified under the Tariff Act of 1930.

Acquires Fort Orange Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

ROCK CITY FALLS, September 13, 1937—The Fort Orange Paper Company, of this place, has been acquired by the Cottrell Paper Company, also of Rock City Falls, N. Y., which will operate the plant.

Canadian Pulpwood Demand Increasing

Bank of Commerce Reports Canada Is Source of Pulp Rather Than Manufacturer of Fibers and Yarns—Russia, World's Largest Pulp Producer, Followed by U. S. A.—Reforestation Plan of Ontario Government.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., Sept. 13, 1937—Rapid expansion in the rayon industry, coupled with increase in newsprint output, has caused a record demand for Canadian pulpwood, the production of which is now fully 3,000,000 metric tons larger than in 1929, according to a statement just issued by the Canadian Bank of Commerce, head office, Toronto. "It is as a source of pulp, rather than as a manufacturer of yarns and staple fibre that Canada figures prominently," the review states, "although her production of the processed material has grown considerably since 1925. Russia is recorded as the world's largest producer of wood pulp for all purposes, followed in order, by the United States and Canada, but some of the American material is made from Canadian wood, and if allowance could be made for this factor the position of these two North American units might be reversed. But it is clear that Canada has furnished a large part of the pulp required by the world rayon industry in recent years, and that this year the demands made upon her have greatly increased. Witness the fact that exports of Canadian pulp of all kinds, but mainly of the chemical variety required for rayon, rose in the first seven months of 1937 by 20 per cent in volume and by 35 per cent in value over the like period last year. The marked rise in value suggests that this form of activity has become the most profitable of major forestry operations in Canada.

"How the rayon industry and the allied pulp producers would be affected by a long conflict between Japan and China cannot be precisely foretold. Japanese economy is reported already to have been placed on a war footing which might be taken as foreshadowing restrictions upon all non-armament industries, but Japan's need of foreign exchange would probably be increased rather than lessened by a prolonged war with China. Moreover, in wood pulp manufacture, as in all other forms of industry, there is the danger of over-expansion in a period of greatly increased demand."

Reforestation Plan Rumor

Embarcation by the Ontario Government on a wide-scale program of reforestation, within the next year or two, was indicated in Tamiskaming last week by Premier Hepburn, when he stated that both his province and the Province of Quebec would give serious consideration to the matter of looking after their great timber and pulpwood areas. While Mr. Hepburn declined afterward to amplify his declaration, it was learned from other sources that in the event of his Government's return to power on Oct. 1, steps will at once be taken to put this contemplated reforestation policy into effect.

Finlay Reports England Busy

That business is booming in England and that the paper mills are all prosperous were impressions formed by R. I. Finlay, head of United Paper Mills, Ltd., Toronto, who has just returned after a three months' visit to the British Isles. Mr. Finlay went over on the Queen Mary and toured England, Scotland and France in his own car. Making London his headquarters he made it a point to inspect most of the big paper plants which were all doing a wonderful export business. The whole island, said Mr. Finlay, reflected intense activity in all lines of industry and this was not all due to Britain's huge armament program. As to the possibility of a flare-up among the nations in the East and the likelihood of Great Britain being mixed up in it, Mr. Finlay said that more was heard of such an eventuality on this side of the water than in England. In most cases, said Mr. Finlay, the near-rows between the nations were over sensationalized.

Safety in Northern Mills

D. B. Chant, secretary-engineer of the Ontario Pulp and Paper Manufacturers' Association, has returned to Toronto after a visit of inspection to paper mills at the head of the lakes, including the plants at the Soo, Fort Frances, Kenora, Dryden and the mill under construction at Red Rock, near Kenora.

Commenting on the greatly increased activity in pulpwood operations Mr. Chant said that industry in this line was undergoing what looked like a small-sized boom such as has not been seen in years. In this department of the pulp and paper industry, as well as in the paper manufacturing plants, greatly increased attention is being paid to good housekeeping and plant management with the result that safety hazards have been greatly reduced and accident prevention is a goal that all the mills are striving for under cooperation of both employers and employees. The mechanical and physical condition of the plants are being studied by practically everyone in the industry, said Mr. Chant, with the result that accidents have been greatly reduced in numbers and severity.

Paper Wages in British Columbia

Vancouver, B. C., September 13, 1937—Payrolls of the pulp and paper industry of British Columbia showed an increase of $400,688 last year. The total payroll for the industry for 1936 was $4,695,356. This is an average weekly increase per worker of the pulp and paper industry of British Columbia of 71 cents, establishing the average weekly wage at $24.94.

B. C. payrolls increased by $16,000,000 last year. In addition to this gain in industrial payrolls, the average weekly wage shows a gain of $2.20, while there was an increase of 9,000 in the number of wage earners in the Province.

These figures are revealed in the report of the B. C. Provincial Department, of Labour released by the Honorable George S. Pearson. Aggregate of money distributed in industrial payrolls throughout the year was $140,349,591.

DON'T LET

Dirty Felts

STOP YOUR MACHINES

Keep track of machine shut-downs and see if dirty, filled up felts aren't causing the bulk of them.

Vickery Felt Conditioners keep the felts as clean as new right through the week. If there's a single press felt in your machine room that's putting a crimp in production, let us show you how quickly a Conditioner will pay for itself.

BIRD MACHINE COMPANY · SOUTH WALPOLE, MASSACHUSETTS

VICKERY FELT CONDITIONER

YOU CAN MAKE MORE MONEY WITH NEW BIRD MACHINERY

Financial News of Pulp and Paper Industry

United Paperboard Reports Larger Net Profit for Fiscal Year—Provincial Paper Earnings for Six Month Period Rise — Woodlot Owners and Creditors of Brown Co. Agree on Reorganization Plan — Other News.

New York Stock Exchange

High, Low and Last for the Week Ending September 15, 1937

	High	Low	Last
A. P. W.	6	5⅜	5⅜
Armstrong Cork Co.	56½	50¾	53¼
Celotex Corp.	33	28	31
Celotex Corp., pf.	66	61⅛	61⅛
Certain-Teed Products Corp.	10⅜	8	9½
Champion Paper & Fibre Co.	48	42½	48
Congoleum-Nairn Co.	33½	31½	33
Container Corp. of Amer.	24⅛	20	23¼
Continental-Diamond Fibre Co.	14½	13	13½
Crown Zellerbach Co.	19¾	15¾	18¼
Crown Zellerbach Co., cum. pf.	94⅜	91	92½
Flintkote Co.	24¼	20	22¾
Robert Gair	11	8½	9½
Robert Gair, pf.	32	32	32
International Paper & Power (a)	15¾	13¼	14½
International Paper & Power (b)	11½	8¾	10
International Paper & Power (c)	5¾	4½	5⅛
International Paper & Power, pf.	92½	75	82
Johns-Manville Corp.	111½	98½	106¼
Johns-Manville Corp., pf.	125	121	125
Kimberly-Clark Corp.	35	30	31
MacAndrews & Forbes	31½	31½	31½
Masonite Corp.	44	39	40½
Mead Corp.	22⅞	17½	22
Mead Corp., pf.	94	88	88
Paraffine Companies, Inc., pf.	60	57⅞	57⅞
Ruberoid Co.	28	25	26
Scott Paper Co.	41	40	40½
Sutherland Paper Co.	27	25	25½
Union Bag & Paper Corp.	69	61¼	66
United Paperboard Co.	7⅝	6¾	8⅛
U. S. Gypsum Co.	91	89	89

New York Curb Exchange

High, Low and Last for the Week Ending September 15, 1937

	High	Low	Last
American Box Board Co.	16½	14¾	14¾
Brown Co., pf.	65	54½	63
Great Northern Paper Co.	36¼	35	35
St. Lawrence	10	10	10
St. Regis Paper Co.	6¾	5⅛	6⅜
St. Regis Paper Co., pf.	98	96	97
Taggart Corp.	8¼	7¼	8

United Paperboard Earns $150,684

The United Paperboard Company, after deducting all expenses including depreciation, made a net profit during the fiscal year of $150,684.02.

Sidney Mitchell, president of the company, in submitting his report, says:

"In November 19, 1936, the stockholders adopted an amendment to the company's certificate of incorporation whereby the authorized capital was reduced and the deficit which had been carried on the books of the company was eliminated. The amendment also reduced the par value of the common stock from $100.00 to $10.00 per share and provided for the exchange of two shares of new stock (par value $10.00) for one share of the old stock (par value $100.00). The new stock was duly listed on the New York Stock Exchange on December 31, 1936, and on February 4, 1937, registration of the common stock with the Securities Exchange Commission became effective.

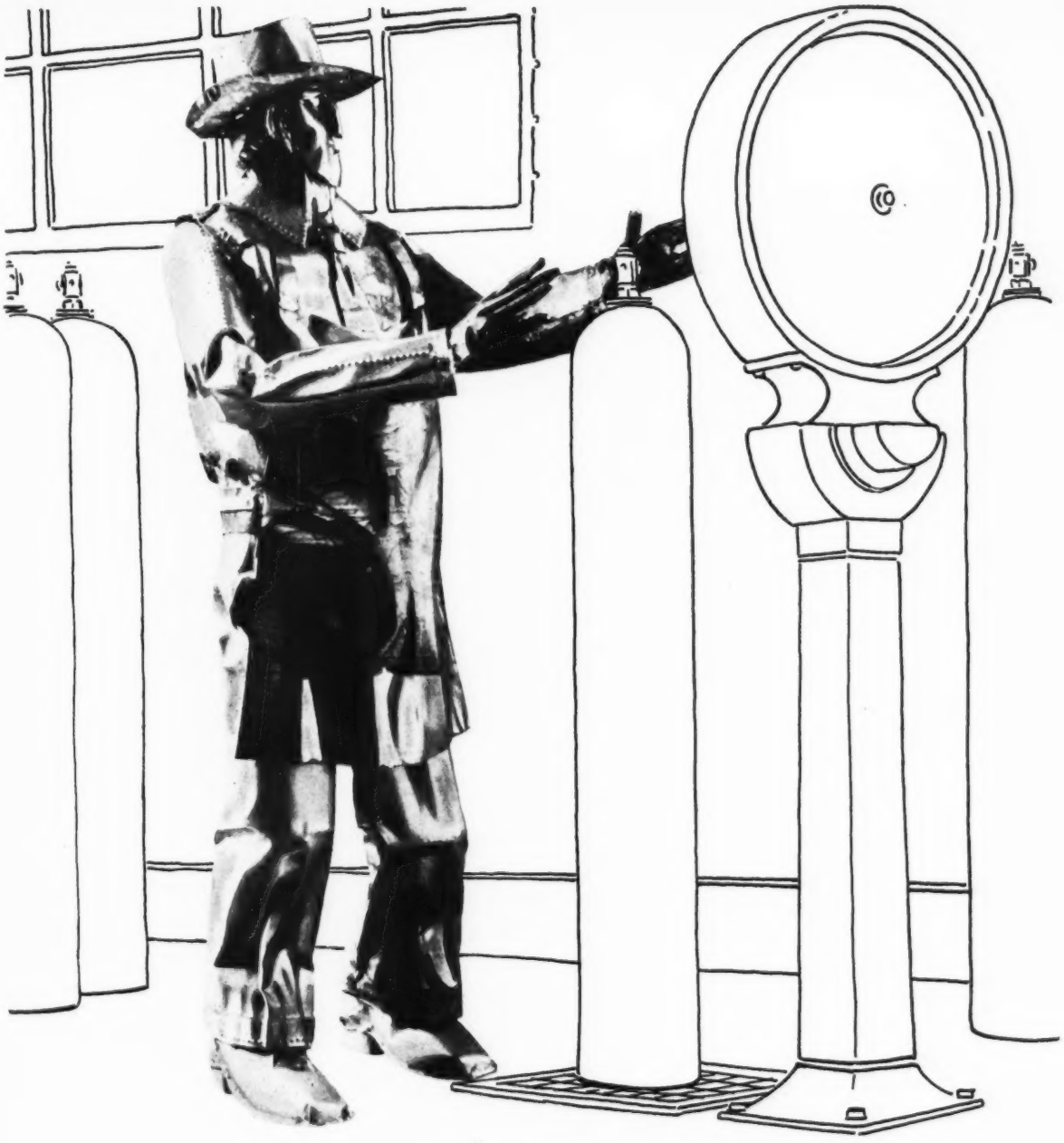
Since these changes were made, a number of stockholders have expressed a desire to have the company's capital structure further simplified by the elimination of the preferred stock, and numerous suggestions were made as to how it should be accomplished. The Directors discussed the advisability thereof and the various plans which had been submitted but decided to take no action until all the stockholders were given an opportunity to express their views.

To date, replies have been received from stockholders representing approximately 145,000 shares of common stock and 4,000 shares of preferred stock. Of these, stockholders representing approximately 135,000 shares of common stock and 2,200 shares of preferred stock have expressed themselves as being in favor of the proposed seven for one exchange; and stockholders representing approximately 10,000 shares of common stock and 1,800 shares of preferred stock are opposed. Most of the common stockholders who opposed the plan stated that less than seven shares of common stock should be exchanged for one of preferred, while most of the opposing preferred stockholders stated that more than seven shares of common stock should be given in exchange for one share of preferred stock. No further action will be taken upon the proposed exchange until more preferred stockholders show a willingness to make such exchange.

"Practically no improvements were made to the company's mills during the receivership although many new devices were available for increasing production and lessening costs. A careful study of new machinery and equipment has been made and a program of rehabilitating the mills and increasing their efficiency has been inaugurated.

"Pursuant thereto, new machinery and equipment have been installed in and improvements made to the mills. As a result, the mills are being operated more efficiently, and production has increased. For example, prior to the installation of the new machinery and equipment the average tonnage manufactured at the Thomson, N. Y. mill was 97 tons per day, and 73 tons per day at Urbana, Ohio. Subsequent to the installation, 117 tons of paperboard were manufactured in one day on a good run at Thomson, and 93 tons at Urbana in one day on a good run. Your company intends to continue its policy of increasing production at its mills to the maximum extent. The improvements made included the building of an addition to the company's mill at Urbana, Ohio, for storage purposes. The total amount paid for the new machinery, equipment and improvements during the fiscal year was $162,363.16.

"The company operates a factory in which it converts paperboard into folding boxes. This factory, until recently, was located in the company's mill at Thomson, New York. Originally, the company, manufactured but two tons of folding boxes per day. This business has grown steadily. Last year the box factory averaged 53 tons of folding boxes per day. The company is hopeful that ultimately all of the paperboard manufactured at Thomson, New York, will be converted into folding boxes. As the box business increased, the box factory occupied more space in the Thomson mill until both the mill and the box factory were cramped for room; all of which



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•

ELECTRO BLEACHING GAS COMPANY
Main Office: 60 East 42nd Street, New York, N. Y.
Plant: Niagara Falls, N. Y.

EBG Liquid Chlorine
FIRST IN THE COUNTRY

tended to make operations of both the mill and the box factory less efficient. Your company, to relieve this condition, rented space for the folding box factory thereby returning to the mill the storage space of which it had been deprived. The space which the company has rented is large enough to convert the entire output of the Thomson mill into boxes and store all necessary raw materials and finished boxes, and a decrease in the cost of manufacturing should follow.

During the fiscal year your company received the sum of $375,245.93 on account of the balance due on the purchase price of the mills sold by the receivers. The purchasers still owe the company the sum of $585,051.03 on account of said sales. The last mentioned amount is being paid in monthly payments and in accordance with the sales agreements.

In May, 1927, the company paid a dividend of 6 per cent on the preferred stock and a dividend of 3 per cent on the new common stock.

Provincial Paper Earnings Up

Net earnings of Provincial Paper Ltd. as reported by the management for the first six months of 1937, was $177,506 after charging depreciation at the rate of $100,000 annually and after providing for preferred dividends and all taxes except income tax. The earnings figures for the half year show coverage of interest on the outstanding 5 per cent bonds nearly four times after depreciation. Allowing for income taxes, the half year's figures indicate an annual rate of earnings more than twice the dividend requirements for the 7 per cent preferred stock. These figures compare with actual results in 1936 showing earnings equivalent to 3.06 times bond interest after depreciation and $11.38 a share for the preferred.

Provincial Paper is controlled by Abitibi Power and Paper Co., which owns the $100,000 shares of Provincial common stock. The shares are carried at $1,500,000 in the Abitibi accounts, and have been appraised at a higher value. There is a possibility that Abitibi will dispose of its holdings of Provincial Paper shares if the Abitibi reorganization plan is adopted because the fine paper business conducted by Provincial is regarded as more or less unrelated to Abitibi's newsprint and sulphite pulp business. The rate of Provincial's earnings for the first half of 1937 indicates profits for the whole year close to $3 a share on the stock held by Abitibi after allowing for income taxes. It appears likely that Provincial will report the best results this year since 1930 when earnings amounted to $14.75 a share on the 7 per cent preferred and $2.71 a share on the common.

Control of Provincial Paper was acquired by Abitibi in January, 1930.

Woodlot-Owners Urge Brown Plan

Groveton, N. H., September 13, 1937—Farm woodlot owners of New Hampshire and Vermont were up in arms today, as they accused members of the Boston Bondholder's Protective Committee of stalling the acceptance of Brown Company's plan of reorganization.

Pointing out that their main source of income during the winter months was derived from sales of pulpwood, cut from their own woodlots, to the Brown Company, two hundred members of the Forest Products Association, unanimously passed a resolution urging immediate acceptance of the reorganization plan by all security holders.

Firmly convinced that their main source of livelihood is endangered if this leading pulp and paper manufacturer in New Hampshire is forced to restrict normal operations by remaining under a trusteeship, the members of the cooperative group denounced the activities of Boston financial interests.

The resolution stated that the members of the Forest Products Association, nearly all of whom have done business with the Brown Company for many years, are satisfied with the treatment they have received, and are fearful of the stability of their market if the company is run under banker management.

This association, with members in all parts of northern Vermont and New Hampshire, is one of the largest pulp cooperatives in the East. Frank Aaltonen, manager of the association, and an experienced forester stated "the Brown Company is the life blood of this organization and of northern New Hampshire. Vermont and Maine. We in this association would find it difficult, if not impossible, to carry out our aims and secure a livelihood for ourselves, if Brown Company ceased operations."

Since announcement of the reorganization plan recently filed with the Federal Court, civic organizations, political leaders and prominent business men have given it their endorsement. All classes of people in this section, many of whom are financially interested in the welfare of the 85 year old company and dependent upon it for their daily support, believe that the plan is fair to all concerned and earnestly hope for its acceptance by stockholders and bondholders

Creditors Vote for Brown Co. Plan

Boston, Mass., September 11, 1937—The General Creditor's Advisory Committee of Brown Company, through its counsel, Robert A. B. Cook, has announced that assents to the company's reorganization plan had been received from more than 80 per cent of the unsecured creditors with claims in excess of $1,248,038 of the $1,530,462 claims outstanding. There are approximately 1,300 unsecured creditors of the company.

Pointing out that this figure was greatly in excess of the two-thirds necessary to meet the requirements of Section 77B of the Bankruptcy Act under which the company has been operating since September, 1933, Mr. Cook in a statement today said:

"This splendid and speedy response on the part of this large group of creditors, coming as it does at a time when so much bickering is emanating from certain sources, stresses beyond doubt the creditors' belief in New England industry and their willingness to do their part for its welfare.

I. P. Votes Reduction in Capital

Corinth, N. Y., September, 1937—The adjourned annual meeting of stockholders of International Paper Company was held here today. Votes were passed authorizing a $37,500,000 reduction in the capital of the company, the capital in respect of each of the 1,000,000 shares of outstanding common stock being reduced from $52.50 a share to $15.00 a share. The effect of this action is to eliminate the company's deficit, which amounted to $26,863,914 at December 31, 1936, and to create a surplus.

Paper and Pulp Safety Section To Meet at Kansas City, Mo., Oct. 11-15

The year's biggest meeting of "life savers"—the 26th National Safety Congress & Exposition—will be held October 11 to 15 in Kansas City, Mo., with several thousand delegates from all sections of the United States and several foreign countries attending.

Prominent safety leaders who will participate on the program include Paul G. Hoffman, president of the Studebaker Corporation; Governor Lloyd C. Stark, of Missouri; Governor Harold G. Hoffman, of New Jersey, and W. H. Cameron, managing director of the National Safety Council.

An interesting series of programs has been prepared for the paper and Pulp Section. Officers of the section are:

General Chairman, George J. Adams, International Paper Company, Glens Falls, N. Y.

Vice-Chairman in Charge of Membership, Arthur E. Winslow, Hollingsworth & Whitney Company, Waterville, Maine.

Secretary and Program Chairman, F. A. Robinson, Kimberly-Clark Corporation, Neenah, Wis.

Monday Afternoon—October 11

2:00 Past Year's Activities and Progress of the Section. General Chairman George J. Adams.
2:30 Report of Accident Experience Exchange in the Paper and Pulp Industry. F. W. Braun, Manager, Safety Engineering, Employers Mutuals, Wausau, Wis.
3:00 Discussion.
3:15 Methods of Obtaining Employee Interest and Cooperation in Safety. B. D. Rogers, Director of Personnel, Bird & Son, Inc., East Walpole, Mass.
3:45 Discussion.
4:00 Major Hazards and Their Elimination in Box Board Mills. E. W. Patton, Safety Director, Lawrence Paper Co., Lawrence, Kans.
4:30 Discussion.

Tuesday Afternoon—October 12

2:00 Safety's Place in an Industrial Relations Program. S. F. Shattuck, Vice-President in Charge of Industrial Relations, Kimberly-Clark Corporation, Neenah, Wisconsin.
2:30 Discussion.
2:45 Election of Officers.
3:00 A. Instructional Methods in Accident Prevention in Pulp and Paper Industry (Actual Demonstration).
B. Practical Demonstration of Accident. Investigation Method. (Group Instruction by Use of Conference Method).
H. G. Noves, Personnel Manager, Oxford Paper Company, Rumford, Maine.
N. B. Giles, Agent, Industrial Education, Office of Education, Washington, D. C.

Wednesday Afternoon—October 13

2:00 Safety Rule Penalties—Their Strong and Weak Points. L. Russell Simpson, Safety Director, The Brown Paper Mills Company, Monroe, La.
2:30 Discussion.
2:45 Management's Function in a Safety Program. (Speaker to be announced).
3:15 Discussion.
3:30 Your Hour—Open Forum for New Comers and Old Timers. (Bring your perplexing safety problems and let the boys help solve them.)

Thursday Afternoon—October 14

1. Data on Our 1936-37 Safety Contest A. Scott Dowd, Chairman, Contest Committee.
2. Presentation of Contest Awards.
   (a) National Safety Council Trophies. Officer of National Safety Council.
   (b) The Paper Industry Trophy. E. B. Fritz, Publisher, "The Paper Industry Magazine," Chicago.

Thursday Afternoon—October 14

2:30 Round Table Discussion—Paper Mill Machine Room Hazards. Discussion Leader—General Chairman George J. Adams, Chicago.
A. Wet End Hazards.
B. Wire Changing Hazards.
C. Dryer Hazards.
D. Slitter Hazards.
E. Stack and Winder Hazards.
F. Slipping and Falling Hazards.
(Not a panel discussion—several members agreed to have machine tenders present to participate in the discussion—each member is urged to bring a machine tender).
4:00 Remarks by Newly Elected General Chairman.

Kieffer Mills Make Improvements

EWING, Ind., September 13, 1937—The Kieffer Paper Mills are rapidly bringing to a close their Expansion and Improvement program for 1937.

The work consisted of the installation of a new latest type high speed Corliss. This engine is driving a new Generator, as well as the constant part of their No. 3 Paper Machine, and will carry all the motors that are now in use with ample current for future electrical devices contemplated.

The company has been buying power from one of the Public Utilities. This will now be dispensed with, except as a standby.

They have installed another deep water well, electric driven, gravel packed, and now have a full supply of fine, clear, cool water, more than sufficient for their present needs.

They have also just completed an 8,000 square foot concrete floor Warehouse for finished stock, which will further enable them to carry stocks of their finished products for quick shipment to their customers in all parts of this country and Canada, of their well known "SHOKSORB" products.

Their production this year has been at least 25% ahead of last year's and they are very optimistic in regard to the immediate future on the various Shoksorb products they are manufacturing.

Government Paper Bids

Washington, D. C., September 15, 1937—The Government Printing Office has received the following bids for 6,700 pounds (50,000 sheets) of blue M. F. book paper; Stanford Paper Company, 7.36 cents per pound; and Barton, Duer & Koch Paper Company, 7.62 cents.

For 8,000 pounds (40,000 sheets) of jute wood tag board; Whitaker Paper Company, 8.57 cents; Reese & Reese, Inc., 8.75 cents; R. P. Andrews Paper Company, 8.75 cents; Barton, Duer & Koch Paper Company, 8.575 cents; J. R. Howarth Paper Company, 8.2 cents; and L. Hyman & Sons, 8 cents.

For 24,500 sheets of white car sign board; R. P. Andrews Paper Company, at $34,96 per M sheets; Barton, Duer & Koch Paper Company, $34.41; Old Dominion Paper Company, $34.956; Whitaker Paper Company, $36.02; Stanford Paper Company, $34.96; Mathers-Lamm Paper Company, $40.75; Paper Corp. of U. S. $34.96; Reese & Reese, Inc., $34.95, $25.25 and $22.36; Walker, Goulard, Plehn Company, $34.90; and Virginia Paper Company, $34.97.

For 465,000 pounds of supercalendered book paper in 38 inch rolls; R. P. Andrews Paper Company, 5.74 cents per pound; Paper Corporation of U. S., 5.74 cents; Stanford Paper Company, 5.74 cents; Whitaker Paper Company, 5.74 cents and John F. Post, Inc., 6.3 cents.

For 7,351 pounds (17,400 sheets) of white 50 per cent rag, ledger paper; Barton, Duer & Koch Paper Company, 11.99 cents; R. P. Andrews Paper Company, 15.95 cents; Stanford Paper Company, 15.52 cents; Dobler & Mudge Paper Company, 15 cents; Mathers-Lamm Paper Company, 15 cents and 15.5 cents; Walker, Goulard, Plehn Company, 15.5 cents; Virginia Paper Company, 15 cents; L. Hyman & Sons Company, 15.9 cents; and Charles W. Beers, 16 cents.

Installs Snyder Maclaren Processes

The James Flett Organization, 400 West Madison street, Chicago, Ill., announces that the Waldorf Paper Products Company, of St. Paul, Minn., has installed a Snyder Maclaren Processes deinking plant for the recovery of pulp from old papers under the Snyder Maclaren Processes patents. The Waldorf Paper Products Company has advised the James Flett Organization that the plant is now in successful operation.

The James Flett Organization also announces that this is the second plant that it has in operation as the Chemical Paper Company, Holyoke, Mass., has been deinking successfully under the Snyder Maclaren Processes patents for upwards of two years.

Belgian Paper Co. Joins TAPPI

Papeteries de Belgique S. A. Brussels, Belgium is the first company in Belgium to become a corporate member of the Technical Association of the Pulp and Paper Industry. This company was formerly the Papeteries de Ruysscher and the Papeteries Anversoises. Its mills are located at Lemberg, near Hal, Brabant and make printings, writings, duplex boards, chromo, cardboard, news, poster, parchment, greaseproof, kraft, on nine machines. It will be represented by H. Vincent of the Research Division, Duffel, Belgium.

WISCONSIN ISSUES DATA BOOK

(Continued from page 21)

lined at the Menasha picnic the objectives of his organization, one of which is a maximum working week of thirty hours.

Workmen's Compensation Cases

In one of the cases heard last week by the Wisconsin Industrial Commission under the state workmen's compensation act was a claim of Orville Huebner, an employee of the Riverside Paper Corporation, Appleton, Wis. He was injured by an automobile while riding his bicycle from the boiler room to the main plant to report for work. He was laid up for two weeks with injuries, and seeks compensation for his lost time.

Additional compensation is sought by Eric Grant from the Wisconsin Container Corporation, Menasha, Wis. for injuries suffered to his back. He was injured in March of this year, and was paid compensation until May 18. He claims his injuries prevented him from resuming work permanently until June 29, and seeks remuneration until that date.

Institute of Paper Chemistry Notes

The annual meeting of members of the Institute of Paper Chemistry, affiliated with Lawrence College, Appleton, Wis., was held Tuesday, September 14. New officers were named. Trustees whose terms expired this year were Ernst R. Behrend, Erie, Pa.; D. C. Everest, Rothschild, Wis., and Rex W. Hovey, Rumford, Me. Ernst Mahler, executive vice-president of the Kimberly-Clark Corporation, Neenah, Wis., is president of the board of trustees.

Paper on Spruce Wood

Dr. Friedrich Brauns, a member of the Institute staff, is in Rochester, N. Y. this week, where he will give a paper at the meeting of the American Chemical Society. His subject will be "Effect of Pre-treatment of Spruce Wood on the Reaction of the Sulphite Cooking Process."

Wife of E. A. Oberweiser Recovering

E. A. Oberweiser, president of the Whiting-Plover Paper Company, Stevens Point, Wis., was in Chicago last week to bring Mrs. Oberweiser to her home. She was gravely injured in an automobile accident June 1 at Burns, Wyoming, and after ten days spent in a hospital there was moved to Cheyenne. Since June 28 she has been a patient at Mercy Hospital, Chicago. She is pronounced wholly out of danger and is well on the way to recovery.

B. C. Newsprint Valued at $8,500,000

VANCOUVER, B. C., August 26, 1937—According to a recent report issued by the British Columbia provincial government, only 7 per cent of British Columbia's annual newsprint production is consumed within the province, while 17 per cent goes to British Empire countries, with Australia taking the largest proportion. The remaining 76 per cent goes to foreign markets. The report quoted a total of $8,500,000 valuation for the newsprint production of the province.

Value of the pulp production from B. C. is approximately $3,000,000, according to the figures, 93 per cent of this amount going to foreign markets.

Plan for Paper Salesmen's Course

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., September 13, 1937—Plans are being formulated for the Paper Salesmen's Study Course, under the auspices of the Philadelphia Paper Trade Association. A similar course was conducted last year, the membership of which was over-subscribed so that it was necessary to have two classes. Definite plans will be announced as soon as the committee who is in charge, consisting of Ormand Freile, Paper Merchants, Inc., and president of the Association. Wm. A. Hentz, Thos. Price Paper Company; Joseph H. Miller, Garrett-Buchanan; W. B. Kilinour, Jr., President, Quaker City Paper Company, and Doris E. Lewis, executive secretary of the Philadelphia Paper Trade Association, has completed necessary arrangements.

A meeting of the wrapping paper division of the Philadelphia Paper Trade Association was held at 6 o'clock on Thursday evening last, in Adelphia Hotel. Charles A. Wilder of Wilder Brothers, who presided, gave a very splendid talk on conditions in the wrapping paper market as he found them. His talk was interspersed with humorous anecdotes which evoked much laughter and applause.

No Connection with Spotswood Corp.

The Spotswood Realty Corporation, 40 Exchange Place, New York, writes that, "On September 9th last, the American Pulp Corporation filed a petition in bankruptcy in the United States District Court of New Jersey, and in order that there be no confusion in this matter, I am taking this opportunity to inform your paper that there is no connection whatsoever between the American Pulp Corporation and the Spotswood Realty Corporation.

"The Spotswood Realty Corporation recently purchased the American Salpa plant at Spotswood, New Jersey, with a view to installing a pulp mill there. It is expected that the installation of equipment to carry out this purpose will be started within the course of the next few months.

"For your further information, the American Pulp Corporation was merely an inoperative experimental company which the directors deemed advisable to liquidate. This latter company has no trade accounts of any nature payable and its creditors are a few individuals who have in the past advanced funds to the company for experimental purposes."

George W. T. Skinner Joins Hubbs

Charles F. Hubbs & Co. have engaged the services of George W. T. Skinner of Skinner & Co., Inc., as manager of their downtown branch located at 30 Beekman street, New York City. Skinner & Co., Inc., have been paper merchants for over half a century, the business having been organized in 1879. They have always maintained an exceedingly high reputation. The entire personnel of Skinner & Co., Inc. will also be located with Hubbs.

Mr. Skinner has long been an outstanding figure in the paper trade, having served as president of the New York Paper Association, and as a director of the National Paper Trade Association. He has a thorough knowledge and experience in the paper industry, and his friends in the trade are innumerable. It is certain that the change over to the Hubbs organization will prove mutually beneficial, both to Mr. Skinner and the Charles F. Hubbs Company.

His many friends are wishing him further success and happiness.

Paper and Cordage To Meet

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., September 13, 1937—The opening meeting of the fall season for the Philadelphia Paper and Cordage Association will be held on Friday, September 17 at 12:30 in the Rose Room of the Adelphia Hotel. This will be the first meeting since the now famous Golf Outing at the Manufacturers Country Club in June. It will be an important event for the paper and cordage trade in the Philadelphia area.

The guest speaker for this occasion will be W. Arnold Landvoigt, Supervising Agent, U. S. Secret Service, District No. 3, comprising the state of Pennsylvania. Mr. Landvoigt will tell of his specialized work in running down counterfeiters and will explain some of the methods of detecting counterfeit money. He will also relate incidents from his ten years' experience as head of the Secret Service at the White House during which time he served directly Presidents Harding, Coolidge and Wilson.

The various committees of the Philadelphia Paper and Cordage Association will report on the activities during the summer, and plans will be outlined for a busy Fall season.

On Thursday, September 23, the association will hold an all-day Golf Outing at the Roxborough Country Club, featuring a 36 Hole Golf Tournament, and a hole-in-one contest on the famous 9th hole. A number of prizes has been donated by various firms and these will be distributed in the evening. A buffet supper will be served for everybody. At this writing the reservations have been pouring in, and Jack Shinners of Acme Specialty Company and Harry Platt of Denney Tag Company advise all those who wish to participate to make their reservations at once so that no one will be disappointed. Besides golf there will be tennis, quoits and other entertainment for those not wishing to play golf.

Bemis Incorporates in Canada

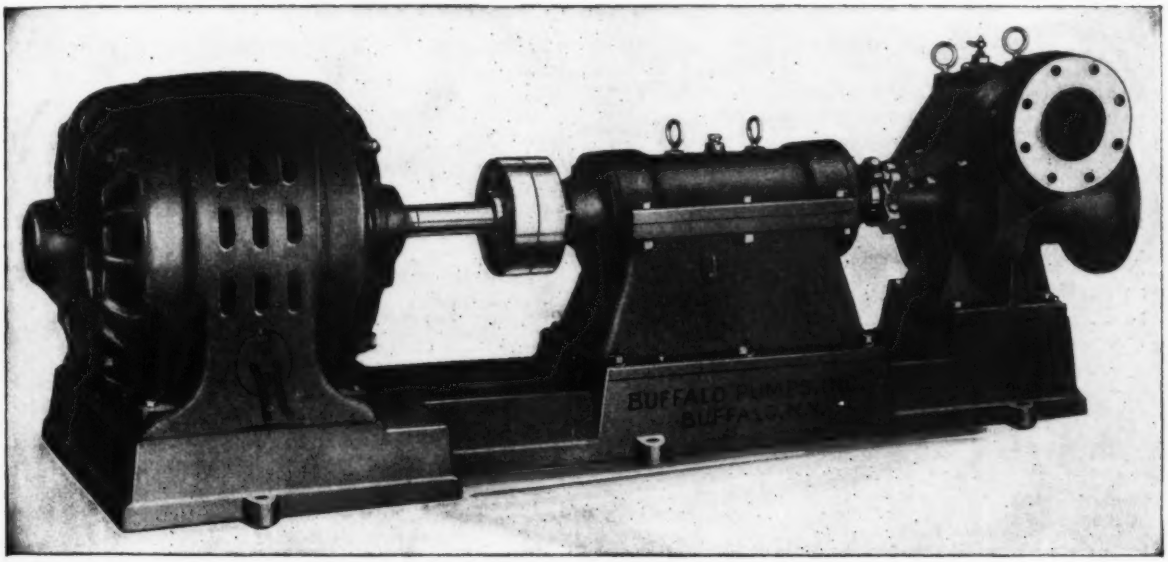
Vancouver, B. C., September 11, 1937—Incorporation of the Canadian-Bemis Bag Company Ltd. as an extra provincial company has now been completed at Victoria B. C. The firm will engage in the business of manufacturing and distributing jute, cotton, paper, and all other types of bags and other containers for goods, according to registration papers. Authorized paid up capitalization is shown as $1,000,000. The head office of the firm is located at 311 Alexander avenue, Winnipeg, Man. Harry. Glass will administer affairs of the company in B. C. and has headquarters at the B. C. registered office, 900 Parker street, Vancouver.

British Newsprint Mills Face Problem

[FROM OUR REGULAR CORRESPONDENT]

Washington, D. C., September 15, 1937—A serious financial problem is facing British newsprint manufacturers, who in some cases, have made contracts at a stipulated price up to the end of 1938 and have neglected or been unable to cover their wood pulp requirements, according to a recent report from Assistant Commercial Attache James Somerville at London. The price of wood pulp in the space of a few months has risen by 50 to 100 per cent. It is further stated that a feeling exists in some quarters that some of the big newsprint consumers may see it to their own interests to consent to a readjustment upwards of their 1938 contract prices.

MODERN PUMPS for MODERN MILLS



"Buffalo" PAPER STOCK PUMPS

Because "Buffalo" Pump engineers make it their business to keep fully informed on modern manufacturing methods in the paper industry, "Buffalo" Paper Stock Pumps are establishing new performance records in many mills where pumping equipment is being brought up-to-date.

Production is higher. Cost per pound is lower. Breakdowns are few and far between. And in many mills, the operators tell us that the saving in power alone soon pays the cost of a "Buffalo" pump installation when compared with the old obsolete pumps replaced.

If your production costs are out of line; if you need additional pumps to meet increased demand for your products, we suggest that you get all the facts on "Buffalo" Paper Stock Pumps without delay.

BUFFALO PUMPS, INC.

443 Broadway **Buffalo, N. Y.**

Branch Engineering Offices in Principal Cities

In Canada: Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, and Operation of Pulp and Paper Mills

General Construction News

Spring Hill, La.—The Southern Kraft Corporation, 220 East 42nd street, New York, N. Y., has awarded contract to the Waterman Brick and Tile Company, Lorraine, La., for about 4,000,000 brick for mill units at Spring Hill, vicinity of Shreveport, La., and deliveries will proceed at once. Superstructure will be placed under way at early date on initial buildings, including main machine division and adjoining structures, as well as large one-story warehouse unit. As previously noted in these columns, new plant will be equipped for capacity of 220,000 tons of kraft paper and paper board per annum. Other construction awards will be made soon. Entire project will cost approximately $7,000,000. Company is a subsidiary of the International Paper Company, first noted address.

New York, N. Y.—The Famous Paper Box Company, 54 West 20th street, and Interboro Container Corporation, same address, affiliated organizations, manufacturers of paper boxes and containers, has arranged for lease of five-story and basement building at 113-21 West 20th street, totaling over 60,000 square feet of floor space, and will modernize and equip for new plant. New quarters will provide about 100 per cent increase in present floor space and will be used for large increased capacity. It is expected to occupy the structure at early date. Louis H. Clark is head of both companies.

Three Rivers, Mich.—Fire recently damaged a portion of mill of the Eddy Paper Corporation, manufacturer of container board, chip board and other paper board products, with loss reported close to $50,000, including equipment. It is proposed to rebuild at early date.

Los Angeles, Cal.—The Johns-Manville Corporation, 22 East 40th street, New York, N. Y., manufacturer of insulating building board, asbestos board and allied products, has closed bids on general contract for new mill at Alameda avenue and 283rd street, Los Angeles, previously referred to in these columns, and will make award at early date. Plant will comprise two main operating units, each one-story, 100 x 700 feet and 100 x 310 feet, respectively, with one-story wing extension to latter building, 60 x 90 feet. Several smaller structures for auxiliary and mechanical service will be built. Plant is estimated to cost approximately $1,000,000, with equipment. Stone & Webster Engineering Corporation, 49 Federal street, Boston, Mass., and 601 West Fifth street, Los Angeles, is engineer; Albert C. Martin, Higgins Building, Los Angeles, is consulting architect.

Roanoke Rapids, N. C.—The Roanoke Paper Company, Inc., manufacturer of kraft wrapping papers, etc., has approved plans for new concrete settling basin at mill, 150 feet long, 80 feet wide, and 14 feet deep, with concrete flume, baffle wall and auxiliary construction. Contract for work has been let to the Southeastern Construction Company, 218 West Second street, Charlotte, N. C., and will be placed under way soon. E. H. Graves is company engineer, in charge.

Niagara Falls, N. Y.—The General Abrasive Company, College avenue and Hyde Park boulevard, manufacturer of materials for abrasive paper stocks, has taken out a permit for new addition to plant, to be used for expansion in machine division. It will be one-story, 44 x 104 feet. Superstructure will be placed under way at once. No estimate of cost has been announced.

Kansas City, Mo.—The General Box Company, Forrester-Nace Division, 1600 West Eighth street, manufacturer of corrugated boxes and containers, has superstructure under way for new plant addition, previously referred to in these columns, and will increase the unit from one to two-story in height, 110 x 127 feet, with upper story 24 x 110 feet. Miscellaneous contracts for completion are being let, including plumbing installation to William Warmholz, 1330 West Ninth street, and electrical work to Wachter Electric Company, 3304 Troost street, both Kansas City. General erection contract is being carried out by Edwin Frost, 4421 Bellefontaine street, Kansas City. New unit is estimated to cost over $85,000, including equipment. E. D. Schneider & Company, 2107 Grand avenue, Kansas City, are architects. D. Bruce Forrester is president and general manager.

Southport, N. C.—The Southern Kraft Corporation, 220 East 42nd street, New York, N. Y., has made application for Federal permission to construct a new wharf on the inland waterway about 13 miles west of Southport, at site known as Stone Chimney Landing, to be 32 feet wide and 280 feet long. It will be used by the company for pine log shipments to new pulp mill now in course of construction at Georgetown, S. C. Work will be placed under way as soon as authority has been granted. The Federal engineer office at Wilmington, N. C., is considering a project for deepening the channel through Winyap Bay to company mill noted, on the Sampit River, to a depth of 30 feet and total distance of 16 miles, to provide additional facilities in water shipments to and from the plant.

Detroit, Mich.—The Chope-Stevens Paper Company, 1915 West Fort street, commercial paper products, has begun erection of new two-story building on Chene street, recently referred to in these columns, for storage and distributing service, and will push the unit to early completion. It is reported to cost close

TO PAPER-MILL OPERATORS SEEKING RELIABLE, EFFICIENT CONTROL

SAVE TIME AND CONSTRUCTION EXPENSE--- *Specify* G-E CUBICLE CONTROL

In addition to the advantages described, G-E cubicle control safeguards the performance of various control devices by protecting them from dripping or splashing water.

G-E cubicle control is a "unit package" of main control, assembled in one unit at the factory, enclosed in an attractive, compact, sheet-steel cabinet, ready for immediate installation. It is an outstanding electrical feature of practically every one of the new pulp and paper mills.

Install in One Package

Because you receive cubicle control completely assembled—a package of control—you save in construction time and expense, save in space, and increase the provisions for safety, as compared with piecemeal buying and installation. Cubicle control can be installed in replacement of old equipment as well as in the equipping of new mills.

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Each cubicle is self-contained, has a separate door which swings open to permit easy inspection, and is isolated from the others by steel barriers. This construction promotes safety to operators. Furthermore, the individual cubicles are grouped to form an attractive control board. The buses are enclosed in the steel cabinets, affording that much greater protection. Protection of equipment is provided by the design, which confines to the individual cubicle any failure that might occur.

Ask the G-E representatives in your territory for further information, or write Dept. 6—201, General Electric Company, Schenectady, N. Y.

VISIT THE G-E EXHIBIT AT SAVANNAH—1937 TAPPI CONVENTION—OCTOBER 18-20

GENERAL ELECTRIC

011-257

to $65,000, including equipment. The Adler Contracting Company, 17041 Hamilton avenue, Detroit, is general contractor.

Merritton, Ont.—The Alliance Paper Mills, Ltd., Merritt road, manufacturer of bond and other writing paper stocks, has plans under way for new addition to mill, to provide for large increased capacity in fine paper production. It is estimated to cost close to $200,000, including equipment. Work is expected to be placed under way at early date. J. Charles Day, 630 Dorchester street, West, Montreal, Que., is engineer. A. E. H. Fair is manager at mill.

Beaupre, Que.—The Ste. Anne Paper Company, Ltd., a subsidiary of the Abitibi Power and Paper Company, Ltd., Montreal, Que., has work nearing completion on modernization and improvements in local mill, including equipment changes and betterments. It is proposed to place mill in operation at once, and will develop close to normal capacity of newsprint in near future. The mill has been closed for about six years.

New Companies, Etc.

Springfield, Mass.—The Carter Paper Company, 45 Warwick street, has been incorporated with capital of 200 shares of preferred stock and 500 shares of common stock, no par value, to manufacture and deal in paper products of various kinds. Charles L. Beckwith is president, and C. Fred Estey, treasurer.

Wilmington, Del.—The Ridgeway Paper and Supply Corporation has been incorporated under direction of the Colonial Charter Company, Citizens' Bank Building, Wilmington, with capital of $200,000, to manufacture and deal in paper products.

Hartsville, S. C.—The Sonoco Products Company, manufacturer of box board, news board and kindred paper board products, has arranged for the sale of 2,000 shares of preferred stock and 20,000 shares of common stock, to total about $550,000 in proceeds, to be used primarily in connection with expansion at mill, which has been in progress recently.

New York, N. Y.—The Herman R. Hairston Corporation has been organized with capital of $20,000, to deal in waste paper products. New company is represented by Louis M. Basson, 171 Madison avenue, New York, attorney.

Jersey City, N. J.—The Lane Paper Company, Inc., has been incorporated with capital of $25,000 and 2,000 shares of common stock, no par value, to deal in paper products of various kinds. New company is represented by F. Hobart Higgins, 26 Journal Square, Jersey City, attorney.

Menasha to Build Power Plant

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., September 13, 1937—As the first step in building a new 3,000-kilowatt steam generating plant at a cost of $383,000, the City of Menasha, Wis., has started condemnation proceedings to obtain eight lots from the Menasha Wooden Ware Company, situated on the government canal of the Fox River. The municipal utility intends to make contracts with paper mills and other large industrial users of both current and steam so as to justify construction of the largest type of plant approved by the Wisconsin Public Service Commission. It will be an enlargement of the present utility now using water power.

Pittsburgh Tool-Knife in New Plant

The Pittsburgh Tool-Knife and Manufacturing Company, Pittsburgh, Pa., has just moved into its own newly equipped plant at 75-81 Sycamore street, Etna P. O., Pittsburgh, Pa. A new office building has been erected adjoining, and the main two-story

PLANT OF PITTSBURGH TOOL-KNIFE MFG. CO.

plant is entirely devoted to the production of Pittsburgh metal cutting saws, rivet sets, paper knives, chisel blanks and inserted tooth saws.

Asks Government to Approve Plant

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., September 13, 1937—Before proceeding with construction of a new concrete dam and generating plant on the Wisconsin River at Tomahawk, Wis., the Wisconsin Public Service Comporation of Milwaukee, Wis., is seeking federal approval. A declaration of intention has been filed with the federal power commission. The company intends to remove an old timber and rock-filled dam, and a hearing has been set for October 11 to determine whether the project would affect the navigability of the lower Wisconsin River, a tributary of the Mississippi. The project was originally authorized by the Wisconsin Legislature in 1887.

This water power site was purchased some time ago from the former Tomahawk Pulp and Paper Company, and the dam was temporarily repaired to prevent flood danger. The power plant to be erected there will supplement the utility's facilities for supplying current to paper mill customers and adjacent communities.

Allis-Chalmers Gets Order for Large Kiln

The Southern Kraft Company has just placed another order with Allis-Chalmers Manufacturing Company of Milwaukee, Wisconsin, for a large rotary kiln costing $62,500. This will be installed in the above company's new paper mill at Spring Hill, La., where it will be used in the recovery of lime in its chemical, pulp mill. This kiln will be eleven feet in diameter and 250 feet long and will be the largest ever supplied to the paper mill industry. Plant number 8 of the Southern Kraft Company, where it will be installed will have a production capacity of 800 tons of pulp per day.

Allis-Chalmers has previously supplied various sized similar kilns to a number of other plants belonging to the Southern Kraft Company.

Seeing is believing

IN the process of bleaching you can't "bargain" with temperature—it must be measured accurately and held within close limits when fluctuations either high or low mean a loss.

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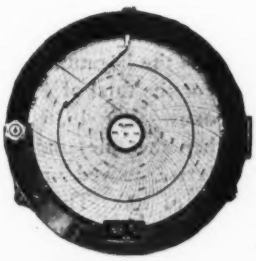
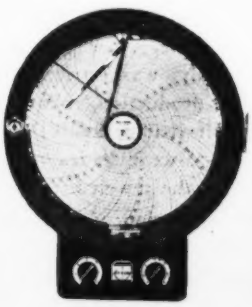
Brown Recording, Indicating and Controlling Thermometers—due to their accuracy, simplicity and ruggedness—more than meet the fast-growing demands for exact and higher standards of measurement. They are the choice of many leading manufacturers in the paper industry because they can be depended upon to hold bleaching temperature within the desired limits.

Brown Thermometers are furnished as mercury, gas or vapor actuated types, one, two or three pen models. Electric and air operated controllers for temperature processes from—40° F. to 1200° F. Wherever Brown Thermometers have been put in charge, reduction in spoilage, improved quality and increased output have quickly followed.

Without obligation our engineers will be glad to recommend the proper Brown Thermometer and Minneapolis-Honeywell Control System for modernizing your process temperatures. Write for catalog 6704. The Brown Instrument Company, a Division of Minneapolis-Honeywell Regulator Company, 4510 Wayne Ave., Philadelphia, Pa. Offices in all principal cities. Toronto, Canada: 117 Peter Street. Amsterdam-C, Holland: Wijdesteeg 4. London, England: 70 St. Thomas' Street, S. E. I.



RECORDING THERMOMETERS



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COMING EVENTS IN THE PAPER INDUSTRY

TECHNICAL ASSOCIATION OF THE PULP AND PAPER INDUSTRY—Fall Convention, DeSoto Hotel, Savannah, Ga., Oct. 18-20, 1937.

NEW ENGLAND SECTION, Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Nonotuck Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION, Technical Association of the Pulp and Paper Industry—Second Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION, Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION, Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park-American Hotel, Kalamazoo, Mich.

HIGH TOTALS OF 1936 IN PAPER BOX SALES BEING SURPASSED

Opening of an unexpected field in the creation of special containers for the multitudinous private brands, recently placed on the market, has given a new impetus to the paper box industry. As sponsors recognize fully the importance of attractive packaging in meeting the competition of national brands, whose retail price has been fixed by both State and Federal legislation, paper box sales for the first seven months of 1937 averaged 10 to 15 per cent larger than the 1936 comparative. For some individual factories the top range was up to 35 and 40 per cent.

Labor difficulties in some of the major paper box consuming industries accentuated the summer recession in production of paperboard. For thirty-three consecutive months, however, with two exceptions, when the drop was slight, operating times of manufacturers of paperboard has been maintained above that of the comparative one of the year preceding. Rising from 82.0 per cent of capacity in January, according to statistics compiled by the National Paperboard Association, operating time had reached a new peak at 92.8 in April, a gain of 29.2 per cent over 1936.

Depressed so low during 1930 and years following, progress has been slow in bolstering the price structure. Quotations on most raw materials were marked up during the first quarter, but finished products failed to keep step with the advance. As a result, prices to consumers averaged but 5 to 15 per cent more than a year ago. The general consensus was that any revisions this fall would be in an upward direction. These were some of the major developments revealed by a survey of the paper box industry, which has just been completed by Dun & Bradstreet, Inc.

For outstanding progress thus far this year, the folding box division nearly was on a parallel with that recorded for corrugated and solid fiber shipping containers. Despite the minor recession during June and July, production ranged from 20 to 25 per cent larger than the volume turned out in the first seven months of 1936. This gain was extended from the rise of 11 per cent for the full year of 1936 over the 1935 total, while the latter had advanced by about the same percentage from the figures for 1934.

Number of inquiries has multiplied so rapidly, since the year's low was touched in July, that many factories have sufficient unfilled orders to sustain operations well into the fourth quarter. Even though inventories of many concerns have reached substantial proportions, buyers have increased their commitments, apparently in anticipation of a further strengthening of the price structure. The general average of inventories, however, was considered no more than adequate to meet the heavy Fall selling season.

Based on the achievements of the first seven months and the orders booked since the beginning of August, a new peak is indicated for the total of 1937 sales (shipments) of folding boxes. For 1936 an all-time high was established when the sales index, in its fourth consecutive annual rise, moved up to 110.3 per cent of the 1930 average of 100. The distance covered since this division's low was touched in 1932 at 73.8 amounted to 49.5 per cent.

After successive monthly increases for more than a year, with orders during the first quarter of 1937 at an all-time high, operations in some divisions of the setup paper box division serving commodity manufacturers started to slacken in June. The downtrend, which was extended in July, was attributed chiefly to the curtailment of shoe production, following the new record set for the half-year period. Demand from the textile and ready-to-wear trades was fairly constant, and widened from the jewelry trade.

Helped by the more intense application of artistic packaging technique, larger orders from the cosmetic, drug, candy, gift, hardware, novelty, and other trades supported strongly the 15 to 20 per cent rise in sales (shipments) from the corresponding 1936 seven-month total. Factories turning out special Christmas boxes for retailers were close to full schedules all

Summer. As shipment of these advance commitments will not start until October, reorders are being counted upon to maintain final-quarter operations.

With even a normal holiday business, trade estimates place total 1937 sales of setup boxes at a seven-year high. In 1936 a six-year peak was set, the sales index standing at 88.2 per cent of the 1930 average of 100. This contrasted with 48.2 in 1932, giving an improvement of 83 per cent in four years. The 1936 sales of $10,053,100, as computed by the National Paper Box Manufacturers' Association, were up 8 per cent from 1935 at $9,311,935.

Manufacturers of corrugated and solid fiber shipping containers have maintained production thus far in the current year constantly above that of 1936. With the usual summer recession absent in plants in some parts of the country, the increase for the seven months ranged from 10 to 25 per cent. Reduced shipments to industries slowed by labor difficulties were more than offset by the heavier consumption of new users, and the wider commitments of fruit and vegetable canners to handle the enlarged packs.

Expressed as an index, taking the 1936 average as 100, the productive activity for the entire industry for the first seven months of 1937 stood at 114.6 per cent. Of the five geographical divisions, the largest gain was recorded for Southern, which rose to 126.6 per cent of its 1936 average. This was followed by Eastern, which advanced to 116.9 per cent, and by the Midwest, with a rise of 114.9 per cent. Pacific reached 113.8 per cent of its 1936 average. The smallest increase was in Central at 109.2 per cent.

Prevailing price level in the corrugated and solid fiber division of the paper box industry can be defined easily by a comparison with the All-Commodity Price Index, compiled by the United States Bureau of Labor Statistics. In an almost continuous rise since late in 1933, the latter has reached 87 per cent of its 1926 average. The Corrugated Price Index, on the other hand, stands at only 65 per cent of its 1926 average. From 19 per cent in 1933, the margin between these has broadened to 25.3 per cent.

Improved financial position of most paper box manufacturers reduced to 1 the number of applications under Section 77-B this year. In fact, since this new method of corporate reorganization became available on June 7, 1934, but 6 cases have been listed for the industry.

Of these, 1 was in 1934, 2 in 1935, 2 in 1936, and 1 thus far in 1937.

Up to the end of July, failures of paper box manufacturers this year averaged 1.1 a month. This compared with a monthly average of 1.2 for 1936, and with 1 for both 1935 and 1934. With the exception of 1936, when a gain of 2 advanced the total to 14 from 12 in 1935, the downtrend of bankruptcies has been uninterrupted since 1932. The 35 recorded for the latter year marked a new peak.

Production Ratio Report

These statistics are based upon paper production reports to the American Paper and Pulp Association.

COMPARATIVE MONTHLY SUMMARIES

Months	1937	1936	1935	1934
January	90.3%(c)	76.1%	65.8%	.....
February	90.1%(c)	77.9%	70.0%	.....
March	90.3%(c)	76.0%	70.5%	.....
April	92.1%(c)	82.3%	70.0%	.....
May	90.6%(c)	81.6%	69.4%	.....
June	87.6%(c)	80.7%	72.3%	.....
July	82.4%(c)	77.3%	64.9%	.....
August	83.4%(c)	81.5%	70.9%	.....
September	.....	80.5%	71.9%	58.2%
October	.....	87.6%	75.6%	64.7%
November	.....	88.0%	75.3%	61.7%
December	.....	85.9%	71.2%	59.6%
Year Average	.....	81.3%	70.5%	.....
Year to Date				
First 35 weeks	88.2%	79.1%	69.0%	.....

COMPARATIVE WEEKLY SUMMARIES

CURRENT WEEKS, 1937		CORRESPONDING WEEKS, 1936	
*August 7	83.1%		
*August 14	82.7%	August 8	80.2%
*August 21	84.8%	August 15	80.9%
*August 28	82.8%	August 22	81.4%
*September 4	78.3%	August 29	83.5%
		September 5	81.0%

The following statistics show the number of mills reporting by ratio groups:

	Number of Mills Reporting, Current Weeks				
Ratio Limits	Aug. 7, 1937	Aug. 14, 1937	Aug. 21, 1937	Aug. 28, 1937	Sept. 4, 1937
0% to 50%	66	79	67	64	46
51% to 100%	244	231	246	239	124
Total Mills Reporting	310	310	313	303	170

* Subject to revision until all reports are received.
(c) Basic capacity data have been adjusted to correspond with ratings reported on January 4, 1937 Machine Improvement Survey.

According to reports from the National Paperboard Association, per cents of operation, based on "Inch-Hours", were as follows:

Mos.	1937	1936	1935	1934	Mos.	1937	1936	1935	1934
Jan.	80%(e)	61%	61%	....	July	67%(e)	69%	59%	....
Feb.	86%(e)	67%	67%	....	Aug.	....	75%	65%	....
Mar.	87%(e)	68%	67%	....	Sept.	....	76%	69%	62%
Apr.	89%(e)	70%	61%	....	Oct.	....	82%	76%	63%
May	86%(e)	68%	61%	....	Nov.	....	79%	70%	56%
June	75%(e)	68%	65%	....	Dec.	....	74%	60%	52%

Week end. Aug. 7, 1937—73%
Week end. Aug. 14, 1937—75%
Week end. Aug. 21, 1937—73%
Week end. Aug. 28, 1937—74%
Week end. Sept. 4, 1937—73%

(e) Basic figures revised to include new members of the National Paperboard Association.

Champion Paper Wins Safety Contest

[FROM OUR REGULAR CORRESPONDENT]

HAMILTON, Ohio, September 13, 1937—Hamilton industrial and business concerns, including the paper mill and paper machinery manufacturers, this week arranged for a safety campaign, L. H. Frechtling, president of the Hamilton Industrial Safety Council announced.

A meeting will be held September 30 at the Anthony Wayne Hotel when certificates to group winners of the first six months contest of 1937, will be awarded by H. B. Barth, safety engineer of the Ohio Industrial Commission.

The Champion Paper and Fibre Company was the winner of the first contest, and will receive the award at that time.

Mr. Barth will discuss the second six months' contest now in progress. The firm with the best safety record for the year, will be awarded the handsome plaque by the Chamber of Commerce.

A. D. Caldwell, secretary of the Ohio Industrial Commission, and Thomas P. Kearns, of Dayton, who is superintendent of the Division of Safety of Ohio, will be the principal speakers.

"Now there's an OPAQUE sheet"

Salesmen are encountering many comments such as this when offering the new improved lines—more opaque, whiter and brighter papers that arouse enthusiasm among paper dealers, printers and consumers.

Because the desired degree of these qualities can be obtained by CRYPTONE and ALBALITH Zinc Sulphide Pigments, which are available in a range of strengths to meet a variety of requirements, the use of these pigments is increasing.

The trade is looking for these qualities. . . . Our Technical Service Department is ready to cooperate with you on any phase of this development.

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ZINC SULPHIDE PIGMENTS IN PAPER

Section of the
Technical Association of the Pulp and Paper Industry

Edited by Ronald G. Macdonald, Secretary

Pulp and Paper Industry Literature Review

Abstracts of Articles and Patents Compiled by the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman

Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.

Coated Papers

Method of Decorating the Surface of Fiber or Composition Board. Karl Eichstädt, assignor to Oxford Varnish Corp. U. S. pat. 2,066,341 (Jan. 5, 1937).—Fiber board intended to be decorated by the application of priming and design coats are first given an intermediate or "locking" coating to neutralize the exudations of the binding materials in the board and which will not affect the color of the priming or design coats. A suitable mixture for the "locking" coating consists of: casein 8 parts, shellac 8 parts, soda 8 parts, water 78 parts.—A.P.-C.

Method of Coating and Ornamenting Paper, Board, Etc. Alan M. Oxerton and Harry C. Fisher, assignors to The Richardson Co. U. S. pat. 2,065,925 (Dec. 29, 1936). —Paper or paperboard is treated with watery emulsions of gummy, resinous, bituminous, or like nature, and is then subjected to a calendering operation under conditions conducive to a highly ornamental mottled or grained appearance.—A.P.-C.

Apparatus for Coating or Coloring Paper. Russell S. Bracewell. U. S. pat. 2,063,887 (Dec. 15, 1936).—Coating material or color is applied in regulated amount to a belt or roll having an absorbent or wettable surface felt, canvas, sponge rubber, etc.), and transferred by rubbing contact on to a roll rotating at a peripheral speed sufficiently in excess of about 3200 ft. per min. to secure a fine fog-like spray which is uniformly deposited on the web and requires no subsequent brushing. The device is enclosed in a suitable casing in close proximity to a roll around which the paper is passed.—A.P.-C.

Treating Pyroxylin-Coated Paper to Eliminate Curl. Russell S. Bracewell. U. S. pat. 2,063,888 (Dec. 15, 1936).—The tendency to curl of pyroxylin-coated paper is permanently destroyed by moistening the uncoated side and then dragging it over breaker bars.—A.P.-C.

Method of and Apparatus for Maintaining Uniformity in Paper Coatings. Alfred D. Wilkinson and John R. Fanselow, assignors to K. C. M. Co. U. S. pat. 2,064,-776 (Dec. 15, 1936).—An apparatus is described whereby the coarser particles of a paper-coating mix are removed from the coating, preferably at the coating roll itself by means of an appropriate color-feeding system and a specially-designed doctor for the coating roll.—A.P.-C.

Specialities

Creped Paper for Bags. Papier-Ztg. 61 No. 96:1806 (Nov. 28, 1936).—Reference is made to the use of creped paper for bags and other wrapping purposes. The best results with regard to elasticity, bursting strength, and elongation can be obtained when the creping is carried out upon a separate machine and not upon the original paper machine. Such machines have various speeds and are equipped to crepe paper of different thicknesses and furishes; some crepe the paper also in the cross direction. They must be able to crepe bituminous papers without splitting of the two webs united by the tar. .A prerequisite of a faultless working is that the bituminous coat is applied in a sufficiently thin layer without impairing the bonding strength of the adhesive.—C.J.W.

Effect of Colored Wrappers on Fat or Fatty Foods. W. L. Davies. Roy. San. Inst., Proc. Health Congress, July, 1936:174-177; Tech. Bull. 13, no. 12:165 (Dec., 1936).—"The mechanism of the development of oxidative rancidity in fats through the action of light is discussed, taking into account the state of the fat in the food, and the effect of other causes of rancidity development. The effect of light passing through colored wrappers depends on wave-length and intensity of the transmitted light. Light of wave-length 4900 and upwards has no effect on fats. With strongly colored transparent wrappers, the depth of color has a greater effect in retarding the development of rancidity under commercial conditions than the color itself."—C.J.W.

Paper As Constructional Material and Technical Product. A. Foulon. Wochbl. Papierfabr. 67, No. 18: 334-335 (May 2, 1936); 68, no. 2:22-23 (Jan. 9, 1937).—The article discusses a number of German patents dealing with waterproofing of different types of paper, the manufacture of building boards, and molded products.—C.J.W.

Manufacture and Printing of Transfer Papers. Handritschk. Papier-Ztg. 61, no. 100:1876 (Dec. 12, 1836).—ransfer papers are a special kind of coated paper, whose coating consists of a water-soluble layer which contains gum arabic, dextrin and similar substances. Correct conditioning is very important, since the water absorptivity

of the base paper and coated layer varies a good deal, and the paper begins to curl at the slightest change of temperature and moisture. Directions for printing, choice of colors, and storing are given.—C.J.W.

Don't be Misled by Names in Selecting Papers. Cyrus S. Kauffman. Am. Printer 104, no. 1:28-29 (Jan., 1937).—Almost without exception, the names of printing papers give little or no indication of their qualities and characteristics or the uses to which they can be put. As examples, offset and ledger paper are listed. The main factors of intelligent paper selection are: *a*) what is the paper to be used for, *b*) what qualities must it have, and *c*) what paper has these qualities?—C.J.W.

History of Wall Paper Manufacture in Europe. Raffaele Sansone. Paper Industry 18:741-744 (Dec., 1936.—A.P.-C.

Wrapping of Food. G. E. Forstner. Roy. San. Inst., Proc. Health Congr. July, 1936; 178-182.—The physical properties and chemical composition of wrapping materials are discussed from the viewpoints of storage properties, keeping qualities, and contamination of wrapped foods.—A.P.-C.

Decalcomania Paper. J. Maclaurin. Brit. pat. 453,963 (June 4, 1935).—The backing sheet or adhesive is colored with a distinctive dye which will not affect its water-absorption. Control of manufacturing variables is thereby facilitated, and the paper is made proof against counterfeiting.—A.P.-C.

Stencil Sheet. Gunther Wagner. Belg. pat. 414,806 (May 30, 1936).—The base paper is colored so as to render the copy more legible.—A.P.-C.

Luminescent Papers. Maurice Déribéré. Papeterie 58:1022-1031 (Nov. 25, 1936).—A brief discussion of their possibilities and future.—A.P.-C.

Residual Moisture in Cellulose Dielectrics. E. W. Greenfield, J. Franklin Inst., 222: 345-358 (1936).—Dried cable paper shows a regular decrease in dielectric absorption with decrease in moisture content. Application of stress produces a polarized distribution of adsorbed ions, and these ions undergo elastic displacements with changes in the field. The changes of relaxation time and dielectric absorption can thus be qualitatively explained.—A.P.-C.

Transfer Material Such As Carbon Paper. Roger Braunstein, assignor to Société Anonyme des Anciens Etablissements Braunstein Frères. U. S. pat. 2,063,226 (Dec. 8, 1936).—The base sheet is impregnated with a fat material before it is coated with ink, suitably by adding sodium stearate to the beater furnish and liberating the stearic acid by addition of oxalic acid.—A.P.-C.

Siding Material. Lester Kirschbraum, assignor to The Patent and Licensing Corp. U. S. pat. 2,063,935 (Dec. 15, 1936).—Composition board, suitably made according to Kirschbraun's U. S. pat. 1,536,399 of May 5, 1935, or Levin's U. S. pat. 1,785,357 of Dec. 16, 1930, is passed through hot calender rolls, or otherwise treated so as to heat it sufficiently to fuse the waterproofing material on the fibers. The board is then placed between heated male and female dies and subjected to an embossing and cutting operation to form the board into a panel of the desired shape, design and size.—A.P.-C.

Building Material. Charles A. Upson, assignor to The Upson Co. U. S. pat. 2,064,132 (Dec. 15, 1936).—A building material for use as an underlay for linoleum comprises a relatively stiff and rigid body of fiberboard, a layer of relatively soft and absorbent felt paper on one side of the fiberboard and adapted to form the upper surface of the material when laid on the floor, and a layer of waterproofing material between the fiberboard and the felt.—A.P.-C.

Roofing Unit and Method of Making the Same. John H. Plunkett, assignor to The Patent and Licensing Corp. U. S. pat. 2,063,268 (Dec. 8, 1936).—The butt edges are stiffened by applying a coating of sodium or potassium silicate, preferably mixed with a pulverulent material such as infusorial earth.—A.P.-C.

Insulating Material. Johannes Leppik, assignor to Telsit Insulation Corp. U. S. pat. 2,062,996 (Dec. 1, 1936).—Insulating material is made from a mixture of 0.8 to 1.3 parts clay, 1.5 to 2.5 parts hemp or flax waste, 1.5 to 2.5 parts asbestos, 4.5 to 8.0 parts balsa wood dust or sawdust (as binder) and 1.2 to 2.2 parts of milled paper.—A.P.-C.

Composition Shingle. Richard A. Holdsworth, assignor to the Barrett Co. U. S. pat. 2,064,473 (Dec. 15, 1936).—The invention provides a strip shingle having tabs and complemental spaces along one longitudinal edge thereof, the body portion being materially thicker than the tabs.—A.P.-C.

Apparatus for Saturating Material. John H. Weller, assignor to The Barber Asphalt Co. U. S. pat. 2,062,382 (Dec. 1, 1936).—Materials such as roofing felt is saturated with hot asphalt, etc., and before cooling is passed through a suitably heated chamber so that it will fully absorb the saturant with eliminations of the voids.—A.P.-C.

Composite Building Material. Emil C. Loetscher. U. S. pat. 2,067,012 (Jan. 5, 1937).—A mixture of about 65 per cent of finely divided wood with normal resin content (e.g., white pine), 30 per cent finely divided wood with high resin content (e.g., yellow or sugar pine), 5 per cent of a synthetic resin (preferably water-soluble) and 0.5 to 1.5 per cent of burnt or slaked lime, is formed into panels or boards.—A.P.-C.

Progress Report of Paper Testing Committee For 1936-37*

By B. W. Scribner,[1] Chairman

Progress made during the past year has resulted in completion or near-completion of a substantial number of the committee development projects. As usual, the subcommittees have actively attacked the projects assigned to them, and have made a most creditable record. The details follow.

Permeability

A proposed method for "Water Absorptiveness of Non-Bibulous Papers and Paper Boards" has been written by

* Presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Waldorf-Astoria Hotel, New York, N. Y., Feb. 22-25, 1937.

[1] Chief, Paper Section, National Bureau of Standards, Washington, D. C.

P. W. Codwise and distributed for the consideration of members of the Water-Resistance Subcommittee. This is the method of Cobb and Lowe, with modifications developed through investigational testing by the subcommittee members. It consists in applying water to a definite area of the test specimen for a predetermined length of time and weighing the specimen to find the amount of water absorbed. The subcommittee found the reproducibility of test results to be within 10 per cent.

The Chairman of the Subcommittee on Grease Resistance, H. L. Mellen, also prepared a tentative standard method for this test for subcommittee consideration. This is based on the results of subcommittee investigation extending over several years. While it has not been possible to find an entirely satisfactory testing procedure, it is believed that the method will fulfill all practical needs.

E. S. Worth, Chairman of the Subcommittee on Water Vapor Permeability, has made progress in the preparation of a proposed standard for this test, which is based on the method of Abrams and Chilson. It has been found very difficult to specify a testing procedure that will give comparable results for the widely different types of sheet materials that must be considered. To assist in this project, F. T. Carson is making a thorough study of the voluminous literature relating to it, with the objective of publishing a critical discussion of the various procedures being used.

Printing Properties

Because of a change in occupation, B. L. Wehmhoff resigned the chairmanship of the Subcommittee on Printing Properties. Mr. Wehmhoff's studies of methods for testing these properties have been of great value in the development work. He was succeeded by R. H. Simmons, who with the assistance of the subcommittee members, prepared a proposed standard for printing oil permeation and one for relative printing smoothness. These are based on the experimental studies described in past subcommittee reports by E. O. Reed and B. L. Wehmhoff. Vote by the main committee on their adoption is in progress. The oil permeation test includes two procedures. One is permeation through the paper, intended for use with soft papers; and the other is surface absorption, intended for hard papers, very thick papers, or paperboard. Smoothness is determined by measuring the rate of air-flow across the surface of the test specimen.

Physical Methods

Progress was made in the projects of the Subcommittee on Physical Testing, under the chairmanship of James d'A. Clark. Revisions of the standard methods for thickness and bulk were adopted by the association as tentative standards. Clark's method for dirt count was also adopted, as a suggested method. The main committee voted on proposed revisions of the standards for tensile strength and bursting strength, and a method for stretch but there was not sufficient approval of them for recommendation of their adoption. As Mr. Clark resigned the chairmanship of the subcommittee further consideration of these methods and of stiffness test, is awaiting the appointment of a new chairman. It was with much regret that Mr. Clark's resignation, caused by the press of other work, was accepted. A revision of the standard method for basis weight was adopted by the association.

Optical Methods

A revision of the standard method for opacity was adopted by the association.

J. B. Calkin, Chairman of the Subcommittee on Microscopic Testing, completed another revision of the standard method for fiber composition, and a proposed method for specks and spots. Both of these are being considered by the subcommittee members. Further revision of the method for fiber composition was deemed advisable in view of the developments at the Fiber Symposium, held at the Institute of Paper Chemistry, at which J. H. Graff demonstrated his technic for fiber identification and some new stains developed by him. The Graff "C" stain is to be proposed as a tentative standard. The chairman has completed a revision of the chapter on microscopy of paper for the revised edition of the textbook, Manufacture of Pulp and Paper, and is working on a bibliography of the microscopy of paper. An assistant for the latter work, O. E. Dwyer, of Massachusetts Institute of Technology, was secured with the aid of the TAPPI Educational Cooperation Fund.

Chemical Methods

The Subcommittee on Chemical Methods, P. F. Wehmer, Chairman, has made several valuable contributions.

Tentative standards for titanium pigments and zinc pigments were adopted by the association.

A method for reducible sulphur and one for metal staining are being developed to replace the present standard for active sulphur, at the instance of M. M. Rubin, who questioned the validity of the use of the active sulphur method for testing silver anti-tarnish quality. A report prepared by him was forwarded for the consideration of committee members, manufacturers of silverware, and others interested, and the consensus of opinion was in agreement with that of Mr. Rubin. It appears that when tested by the standard sulphur method, paper may pass the anti-tarnish requirement and yet cause staining because of presence of other tarnishing agents or because of irregular distribution of sulphur. Also, that it may fail to pass and not cause staining because of the sulphur being in an inactive condition as far as staining is concerned. A method for reducible sulphur has been submitted for the vote of the main committee, and an actual staining test, made by wrapping silver specimens in the paper under test, is being developed.

The first draft of a proposed revision of the method for starch has been written and has been distributed for the consideration of subcommittee members. Progress is being made in the development of a single method for all of the different filling materials.

Further consideration of methods for alpha, beta and gamma cellulose, copper number, pentosans, resin, and pH, is being withheld pending the results of studies of them being made in the Paper Section of the National Bureau of Standards by H. F. Launer. Studies of the methods for alpha, beta, and gamma cellulose, and for resin, have been completed, and proposed modified methods will appear in Bureau publications in the near future.

Summary

During the year, the association has adopted 4 revised paper testing standards and 3 new ones; the total number of these standards is now 40. One proposed revision was completed by the committee. The work in progress comprises development of 8 new methods and 2 revisions, development of a bibliography of microscopy of paper, and revision of the paper testing section of the textbook, Manufacture of Pulp and Paper.

Grinding Southern Pine Under Semi-Commercial Conditions*

W. J. Walker[1]

Abstract

Considerable data on grinding Southern pine have been collected at the Pulp and Paper Laboratory of the Industrial Committee of Savannah from its inception in 1932 to the present. In working out the problem of making suitable groundwood from Southern pine, various operating conditions on a number of different stones have been followed. This paper records the results obtained and demonstrates that groundwood suitable for the manufacture of newsprint has been obtained. It also indicates that the properties of the pulps produced are greatly affected by stone surface and stone structure. Throughout this work the prime object has been to produce satisfactory pulp regardless of any ordered sequences of contributing factors. In other words the problem has been handled as it would be handled in a commercial plant. Based on an analysis of the results that have been obtained, the need for further investigation of stones of coarser grit structure is indicated.

Previous Work

In 1933 a paper on "Georgia Pine Sulphite and Ground Wood for News Print, Observance on Experimental Production" (*1*) was presented by W. G. MacNaughton and W. F. Allen outlining the work on grinding which had been done on Southern pine at the laboratory up to that time.

Considerable work has been done on Southern pine at the Forest products Laboratory at Madison, (*2*), (*3*), (*4*). We feel that this work at Madison differs from our work in that it is fundamental research while at Savannah the problem has been approached from a semi-commercial viewpoint, which is fundamental application.

Equipment

Pulp Grinder

The grinder made by the Carthage Machine Company is a 3-pocket hand-fed type for 42 inch diameter 20 inch face pulpstones with pockets 13½ inches wide x 18 inches long for wood blocks 18 inches in length. The cylinder diameter is 12 inches.

The drive is an induction motor of 350-h.p. capacity, connected to grinder shaft by a 3-speed reduction gear by which speeds of 280, 300 and 310-r.p.m. may be obtained. Only the speed 280-r.p.m. has been used since this gave peripheral speed of the stone of 3080-f.p.m. when new, which is similar to that in commercial use.

Pressure Pump and Control

The cylinder pressure is obtained by a 2-stage centrifugal pump driven by a direct-connected motor. For load control there is a Meyer governor.

Instruments

The instruments used include an indicating and integrating watt meter, an indicating cylinder pressure gauge, and an indicating thermometer. The thermometer tube is carried through the grinder casing at the back so that the bulb is close to the edge of the pulpstone above the pit level. During grinding the pulp from the stone is thrown against the bulb.

Stock Temperature

The location of the thermometer bulb shows the temperature of the pulp as it leaves the stone, which in general is about 10 deg. C. higher than that of the stock in the pit. This is believed to give a truer indication of the grinding temperature than that of the stock in the pit, since it is not so directly affected by variations in the quantity of shower water.

Wood Measurement

To measure the wood for a grinder run a tank of 52 cu. ft. capacity is used. The volume of the wood is obtained by displacement of water. The wood is then racked and the stack volume of the 18 inch wood usually taken.

Since the apparent density, o.d. weight, on the green volume is obtained for each small shipment of wood shortly after receipt, this density figure is used to calculate the o.d. weight of the solid volume of the wood for the grinder run.

Based on a series of checks on grinding it is assumed that the pulp yield is 94 per cent of the o.d. weight of wood ground. The 6 per cent shrinkage covers the screenings and water soluble material lost in grinding.

Grinder Runs

A great many grinder runs were made to obtain information as to pulp quality and cutting rate to determine the suitability of the stone surface. When it appeared that the pulp was approaching satisfactory quality, power runs were made. These were usually of about two hours duration in which time about 30 cubic feet of solid wood was consumed.

During power runs the time and the reading of the integrating watt meter were taken for the measured volume of wood. During the run 10 minute readings were taken of the temperature, cylinder pressure and indicating watt meter. When the run was completed the time and reading of the integrating watt meter was again recorded.

From the elapsed time, the volume of wood ground and calculated to wood weight and pulp weight, and the watt meter readings, the calculations were made giving power per ton of pulp and the cutting rate in tons of pulp ground on a 10 square foot pocket area in 24 hours.

A sample of the groundwood was pumped from the grinder pit, screened through 10-cut flat plates, and laps taken from the Oliver wet machine for physical tests.

After each run an impression of the stone surface was taken on carbon paper and a glazed sheet.

Physical Tests

Sheets were made on a Valley Iron Works sheet mold, a Valley press and a Valley electric handsheet drier. The sheets were made to weigh 32 lbs. on 24 x 36-500 basis with an area cut to 5 x 5 inches. Six sheets were used for testing.

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* Presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Waldorf-Astoria Hotel, New York, N. Y., Feb. 22-25, 1937.

[1] Member TAPPI; Plant Manager, Pulp and Paper Laboratory, Savannah, Ga.

The bursting test was made on a Perkins Mullen tester; two sheets were used, five bursts each sheet. This average gave bursting strength per square inch in pounds.

$$\frac{\text{Bursting strength} \times 100}{\text{Weight in lbs. (24 x 36-500) basis}} = \text{Per cent bursting strength or points per pound.}$$

The tear test was made on an Elmendorf tear tester using 8 sheets 2½ x 5 inches for five tests.

$$\frac{\text{(5 tears averaged) x 100 (16 sheet basis)}}{\text{Wt. in lbs. (24 x 40-500)}} = \text{Per cent tear.}$$

This tester gives force in grams to continue tear of 16 sheets.

The tensile test was made on a Schopper tensile tester. One strip 15 mm. in width was cut from each of the five hand sheets, to be used for the tensile strength test. This test gives the load in kilograms required to pull the strip apart. Five tests made and averaged:

$$\frac{\text{Aver. x 100 x (1000 gms.)}}{\text{Wt. in lbs. (24 x 40-500)}} = \text{Per cent tensile strength.}$$

Classification was effected using a McNett fiber classifier of 4 units, each unit having a screen over the outlet, 20 mesh flowed into 35 mesh, 35 to 65, 65 to 100, rate of flow 1 gal./min. The first unit had 20 mesh screen, second 35 mesh, third 65 mesh, fourth 100 mesh. All the stock flowing through 100 mesh was considered as loss. One liter of 1.0 per cent consistency groundwood used (10 g. groundwood) for each run. The duration of run was one-half hour and vigorous agitation was maintained throughout.

The pulp in each unit was drained on previously weighed cloth and dried at 105 deg. C., allowed to cool in desiccator and weighed. Twenty, 35, 65 and 100 mesh retention, total retention and total loss were computed (reported on o.d. per cent basis).

$$\frac{(4 \times \text{per cent (20 mesh)}) + (3 \times \text{per cent (35 mesh)}) + (2 \times \text{per cent (65 mesh)}) + (1 \times \text{per cent (100 mesh)})}{100} = \text{Coarseness Modulus}$$

$$\text{Grinding Rate} = \frac{\text{(Wood ground lbs.) x 24 x 3}}{\text{hrs. run} \qquad 2000} = \text{tons per 24 hrs. per 10 square feet of grinding area.}$$

The freeness tests were made on a Schopper-Riegler tester, 3 g. sample at 20 deg. C.

Wood Used

The wood was classified for grinding purposes into two groups depending upon the rate of growth. Since most of the fast growing wood used was loblolly it has been designated for the purpose of this paper as "loblolly." Most of the slower growing wood was longleaf and has been so designated in this paper. A certain percentage of slash pine was used and this comes under the fast growing group. The rate growth[2] for our purpose is designated by

[2] This is determined by counting the number of rings from the center to the periphery and dividing that number by the diameter in inches of that section.

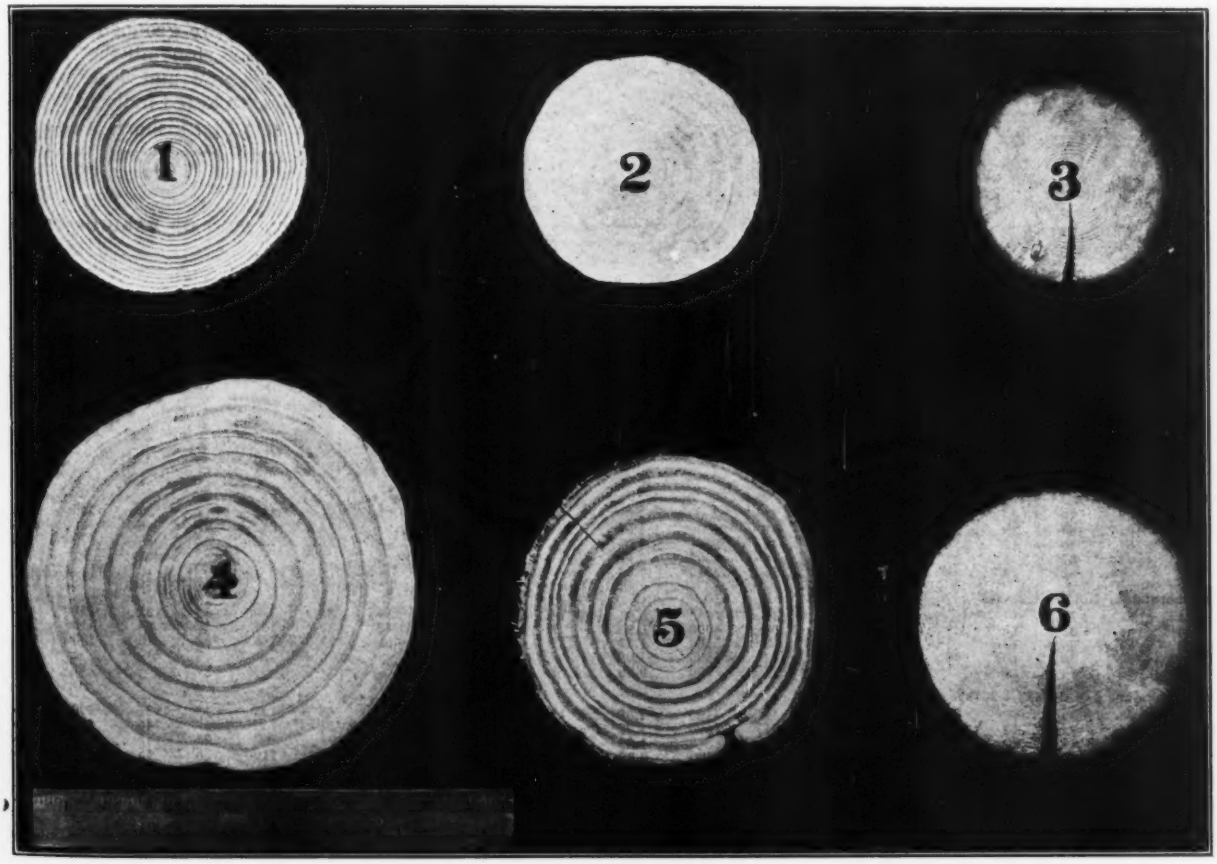


FIG. 1.

1—Longleaf Pine, 27 years old. Grown in dense stand. No fire protection. 2—Slash Pine, 6 years old, planted trees, evenly spaced. Fire protection. 3—Nova Scotia Spruce, 50 years old. 4—Loblolly Pine, 11 years old. Grown on old cotton field. Natural fire protection. 5—Loblolly Pine, same. 6—Northern Maine Spruce, 138 years old.

the number of rings per inch. We have found a workable division of 1.5 to 2.5 as fast, and for slow growing wood 3.7 and more. The density of these two types of wood varies between the limits of 0.41 and 0.48 for fast growing and between 0.50 and 0.60 for slow growing. The wood in these two classes was not separated as regards percentage of springwood and summerwood. The reason for this is that it would be impractical to separate for springwood and summerwood in commercial practice, although it would be perfectly feasible to separate according to the two classes used. The two types of wood are shown in Fig. 1.

Method of Operation

It was found necessary to heat the stone for at least 2 hours to bring it to a proper temperature for best results in grinding. Therefore, a gradual warming-up run was made in the morning and the power run made in the afternoon. In some instances longer runs or runs of a longer period were made but the length of time did not seem to appreciably affect the pulp quality and therefore it was decided that the shorter runs were sufficiently representative. After an impression was put on a stone the pulp produced was observed on the blue glass for quality during the end of the warming up period. If the pulp showed no promise, the face was altered or removed and a new surface applied. When the pulp showed sufficient promise, a trial run was made and the physical tests taken of the pulp. No attempt was made to control the temperature of shower-water, which was artesian water varying from 70 to 78 deg. F., or the consistency of the stock in the pit other than in a commercial range, usually between the limits of 3 and 7 per cent. The very wide variety of burrs used are shown in Table II.

Stones Used

Carborundum-Aloxite, 406-J-31
Carborundum-Aloxite, 401-K-30
Carborundum-Aloxite, 406-I-32D
Cawood—natural
Norton—3780 N Crystolon

Burring Treatment

From experience it was learned that in order to get suitable pulp from this wood with the stones which were used, extreme care had to be taken in burring. The best method of approach was to first smooth the stone over with a dull roller and then build up a pattern very gradually and try the action of the stone after each application of the burr. If the surface was too sharp it was considered best to take the pattern off entirely and start over again. Any attempt to dull off the surface by the use of a brick or dull roller was generally ineffective. From the wide variety of burrs investigated it was felt that if the stone surface was of the same degree of roughness, comparable pulps would be obtained regardless of the type of burr used. Once the proper surface had been obtained, however, it remained in proper condition for grinding for periods of time, the limits of which have not as yet been determined. The results of longer runs for stone No. 1 and stone No. 4 are shown in Tables III and IV. From these we see that the various qualities were not appreciably changed during the comparatively long periods of time the same stone surface was used.

Explanation of Tables and Figures

The results shown in Table I were obtained by grouping various runs according to burst limits without regard to different stone surfaces. In general the limits used were 0 to 14; 15 to 19; 20 to 24; 25 to 29 and 30 and over. In some instances these ranges were varied somewhat in order to obtain more consistent results. Fig. 2 shows these results graphically.

In Table II the different runs were grouped according to stone surface. That is, for each stone all the tests for each surface were averaged. Figs. 3 and 4 show these curves graphically. The numbers plotted indicate the surface used as shown in Table II. Fig. 5 shows a comparison of the results obtained from Figs. 3 and 4 without showing the experimental points.

TABLE I.—GRINDING AND TEST DATA FOR LOBLOLLY AND LONGLEAF PINES SHOWING COMPARISON OF VARIOUS STONES ACCORDING TO BURSTING STRENGTH OF PULPS

LOBLOLLY									LONGLEAF								
No. of Runs Averaged	Cylinder Pressure, lbs./sq. in.	Temperature, deg. Cent.	Grinding Rates, tons o.d. pulp/24 hrs./10 sq. ft.	Power Consumption, h.p. days/ton o.d. pulp	Freeness, cc.	Bursting Strength, per cent pts./lb. 24x36-500	Tearing Strength, per cent grs./lb. 24x36-500	Tensile Strength, per cent grs./lb. 24x36-500	Coarseness Modulus	No. of Runs Averaged	Cylinder Pressure, lbs./sq. in.	Temperature, deg. Cent.	Grinding Rates, tons o.d. pulp/24 hrs./10 sq. ft.	Power Consumption, h.p. days/ton o.d. pulp	Freeness, cc.	Bursting Strength, per cent pts./lb. 24x36-500	Tearing Strength, per cent grs./lb. 24x36-500	Tensile Strength, per cent grs./lb. 24x36-500	Coarseness Modulus
Carborundum No. 1—406-J-31																			
12	88	74	20	48	267	10	30	2600	1.00	2	80	78	15	54	230	8	28	2000	0.87
24	101	84	18	63	195	18	49	4600	1.04	4	101	83	15	73	212	17	46	3800	1.10
25	101	86	15	75	173	23	45	5200	1.05	4	99	82	14	78	180	22	50	5300	1.33
17	91	87	11	95	138	27	46	6000	0.98										
20	99	88	11	100	131	32	50	7200	1.04										
Carborundum No. 2—401-K-30																			
14	68	79	14	60	295	12	39	3000	0.91	18	90	80	19	54	270	11	37	2500	0.94
3	66	87	12	65	207	18	54	4000	0.92	7	95	85	12	86	165	17	44	4100	0.94
8	85	86	12	75	241	22	60	5100	1.17	3	91	87	11	99	143	22	50	5000	1.01
4	90	86	12	100	186	26	61	5500	1.09										
3	96	93	8	141	122	33	61	7700	0.86										
Carborundum No. 3—406-I-32D																			
7	96	90	13	78	177	18	49	3900	1.09	13	100	87	16	65	185	13	36	2900	0.95
5	94	91	12	85	155	22	55	4600	1.22	14	101	89	12	81	142	17	46	4200	0.90
8	104	94	10	110	122	26	53	5800	1.09	3	110	96	12	97	160	21	47	4800	0.77
6	97	93	9	127	103	35	52	7300	0.80	6	101	96	10	106	110	26	45	6000	0.74
Cawood—Medium																			
5	76	84	11	75	210	18	48	3800	0.94	5	78	83	13	58	210	15	40	3300	0.75
7	83	84	12	79	195	22	51	4500	0.98	5	86	86	10	86	194	19	47	4300	0.73
13	99	85	11	96	166	28	52	5500	0.94										
Norton 80 N																			
1	101	94	11	90	110	22	47	5300	0.75	3	83	87	12	75	145	14	29	2900	0.57
5	88	86	11	87	106	31	54	6200	0.83	5	88	86	12	77	130	19	38	4200	0.65
4	71	89	8	111	92	37	53	7500	0.69	6	99	90	11	91	120	22	38	4700	0.52
										4	75	82	9	85	116	26	41	5500	0.63

TABLE II.—GRINDING AND TEST DATA FOR LOBLOLLY AND LONGLEAF PINES SHOWING COMPARISON OF VARIOUS STONES ACCORDING TO STONE SURFACE

Grinding Surface Number	Burrs Used	No. of Runs Averaged	Cylinder Pressure, lbs./sq. in.	Temperature, deg. Cent.	Grinding Rates, tons o.d. pulp/24 hrs./10 sq. ft.	Power Consumption, h.p. days/ton o.d. pulp	Freeness, cc.	Bursting Strength, per cent pts./lb. 24x36-500	Tearing Strength, per cent g./lb. 24x36-500	Tensile Strength, per cent g./lb. 24x36-500	Coarseness Modulus	Run Numbers	No. of Runs Averaged	Cylinder Pressure, lbs./sq. in.	Temperature, deg. Cent.	Grinding Rates, tons o.d. pulp/24 hrs./10 sq. ft.	Power Consumption, h.p. days/ton o.d. pulp	Freeness, cc.	Bursting Strength, per cent pts./lb. 24x36-500	Tearing Strength, per cent g./lb. 24x36-500	Tensile Strength, per cent g./lb. 24x36-500	Coarseness Modulus	Run Numbers
		Loblolly											Longleaf										
	Carborundum No. 1—406-J-31																						
1	4—12 St. Cut	1	110	90	14	89	100	34	46	7400	0.63	243											
2	10 Thread 1/10" Lead	19	100	87	10	109	129	31	50	7100	1.09	250-268 Inc.											
3	9—4½ Sp. and 4 St. Cut	3	102	89	12	81	189	27	48	6000	1.06	189-192-193											
4	10 Thread 1" Lead	17	97	86	12	91	122	26	47	6300	0.97	282-298 Inc.											
5	9—3½ Sp. and 4 St. Cut	12	97	89	17	69	200	24	48	5300	1.11	130-141 Inc.											
6	4—1 Sp. and 9—3 Sp.	2	99	85	16	63	217	21	48	4900	1.04	183-184											
7	10 Thread 1" Lead and 4 St. Cut	8	104	77	22	54	182	18	39	4500	1.07	299-306 Inc.											
8	9—1½ Sp.	13	104	86	16	69	182	17	51	4800	1.18	307-316 Inc. 318-320 Inc.											
9	9—4½ Sp. and 4 St. Cut	5	93	86	20	56	239	16	41	4000	0.93	345-346-348-459-462	2	80	78	15	54	229	8	28	2000	0.87	332-337
10	9—4½ Sp. and 10 Dia.	8	95	78	16	65	257	14	32	3600	0.93	333-336 Inc. 338-340-342-343											
11	10 Thread 1/10" Lead & 4 St. Cut	9	82	68	20	42	258	11	29	2900	0.95	269-277 Inc.	9	101	83	14	75	196	19	47	4500	1.19	504-508 Inc. 515-517 Inc. 524
12	10 Thread 1" Lead																						
	Carborundum No. 2—401-K-30																						
13	4—1½ Sp.	1	100	97	10	108	105	35	63	7700	0.66	603	6	99	86	12	92	158	18	46	4000	0.97	387-389-392-393-395-396
14	9—1 Sp.	3	98	88	10	138	127	30	61	7000	1.03	388-391-394											
15	9—4½ Sp.	1	113	91	14	86	175	23	63	5200	1.12	421	3	102	91	12	84	148	17	50	4300	1.01	412-413-423
16	9—3½ Sp.	3	94	84	10	112	190	23	58	5600	1.01	446-448 Inc.	1	70	74	13	81	180	21	53	4800	1.14	445
17	10—2¾ Sp.-A	5	77	83	12	88	231	22	64	5600	1.27	350-354 Inc.	1	70	74	13	55	295	16	40	3700	0.90	372
18	9—4½ Sp. and 4 St. Cut-A	1	83	88	17	66	185	17	52	4500	1.06	424-605-607-611-	3	99	93	22	49	180	10	36	1800	0.91	430-433-436
19	4—1½ Sp. and 14 Dia.	6	65	83	13	59	269	14	43	2700	0.89	612-614	3	59	86	10	69	230	14	43	3200	0.71	606-609-610
20	10—2¾ Sp.-B	6	86	75	15	62	266	14	39	3400	0.91	366-371 Inc.	2	91	86	13	85	175	18	43	3900	0.87	401-406
21	4—16—1¼ Sp.	5	53	69	11	59	329	12	40	3100	0.92	360-363 Inc. 365	11	86	75	18	52	300	10	34	2400	0.95	374-384 Inc.
22	10—3 Sp. and 4 St. Cut-B												1	85	91	21	50	200	13	39	3700	0.76	443
23	9—4½ Sp. and 4 St. Cut-C																						
24	9—4½ Sp. and 4 St. Cut-C																						
	Carborundum No. 3—406-I-32D																						
25	8—4½ Sp.	3	99	92	9	137	107	32	51	7100	0.86	575-576-582	2	104	102	7	139	85	28	45	6200	0.69	577-578
26	8—4½ Sp. and 4 St. Cut-A	6	99	95	10	106	112	31	53	6900	0.78	583-585-588-590-592-594	3	107	93	14	82	120	26	46	5600	0.79	586-587-589
27	6—4½ Sp.	1	87	94	7	128	120	25	43	5500	1.01	530	7	95	88	11	87	139	17	46	4100	0.99	526-528-529-531-532-534-536
28	9—3½ Sp. and 4 St. Cut	1	74	86	11	79	165	24	51	4800	1.09	573	1	81	81	15	54	210	9	31	1700	1.02	574
29	9—3½ Sp.-B	2	110	96	10	112	120	23	55	5500	1.22	549-552	2	109	90	11	87	130	18	40	4200	0.97	550-551
30	8—4½ Sp. and 4 St. Cut-B	2	91	86	13	72	241	18	51	3700	0.97	599-600	2	94	87	13	64	213	13	40	2900	0.84	598-601
31	9—4½ Sp. and 6 Dia.	2	85	89	15	65	198	17	48	3700	1.19	543-545	5	105	89	17	62	168	13	39	3600	0.94	538-539-542-544.
32	9—3½ Sp.-A												1	123	101	11	100	150	21	40	5200	0.74	546
33	9—3½ Sp.-C	8	104	93	12	93	138	23	54	4500	1.24	554-555-557-560 Inc. 566-568	6	100	87	15	70	189	12	36	2900	1.15	547 553-556-561-565-569-571
34	8—4½ Sp. and 4 St. Cut-C												3	95	94	9	101	153	23	49	5200	0.75	591-596-597
35	9—4½ Sp. and 4 St. Cut-C												1	116	87	14	76	110	18	44	4800	0.54	537
	Cawood Medium																						
36	8—4½ Sp.	1	113	86	10	121	153	28	48	5900	0.90	617											
37	8—1½ Sp.	1	90	89	10	99	150	27	43	5000	0.73	657	1	91	83	14	64	170	15	34	3400	0.76	658
38	8—1½ Sp.	2	85	84	9	104	132	26	52	5600	0.89	615-616											
39	3—1½ Sp. and 10 Dia.	15	92	85	11	86	200	25	53	4900	0.98	623-626-629-630-631-635-639-640-643-649 Inc.	8	82	85	11	75	205	17	44	3900	0.73	625-628-633-636-642-651-652-653
40	3—1½ Sp. and 10 Dia. & 14 Dia.	2	72	83	9	82	160	21	45	4300	0.96	655-656											
41	8—4½ Sp. and 4 St. Cut	2	86	83	16	60	215	20	49	4600	0.90	620-621											
42	10 St. Cut and 10 Dia.	1	94	84	13	65	220	16	51	3500	0.86	622											
	Norton—80 N																						
43	14—3 Sp.	2	82	86	10	102	95	38	51	7800	0.59	684-685	3	87	83	12	84	127	22	38	4800	0.53	682-683-686
44	14 Dia.	3	75	87	8	97	97	33	50	6700	0.78	674-676 Inc.	3	82	83	10	84	117	26	42	5600	0.61	677-679 Inc.
45	10—3 Sp. and 10 St. Cut	3	84	88	10	102	100	33	58	6600	0.89	671-673 Inc.	4	78	84	11	77	126	21	38	4400	0.72	667-670 Inc.
46	14—3 Sp. and 10 St. Cut	1	91	83	12	80	120	31	59	5600	0.75	687											
47	4—1½ Sp. and 10—3 Sp. L. H.	1	101	94	11	90	110	22	47	5300	0.75	661	7	103	95	18	92	104	19	35	4100	0.53	659-660-662-666 Inc.
48	14—3 Sp. L.H. and 14—3 Sp. R.H.												1	41	68	11	46	175	11	25	2500	0.65	680

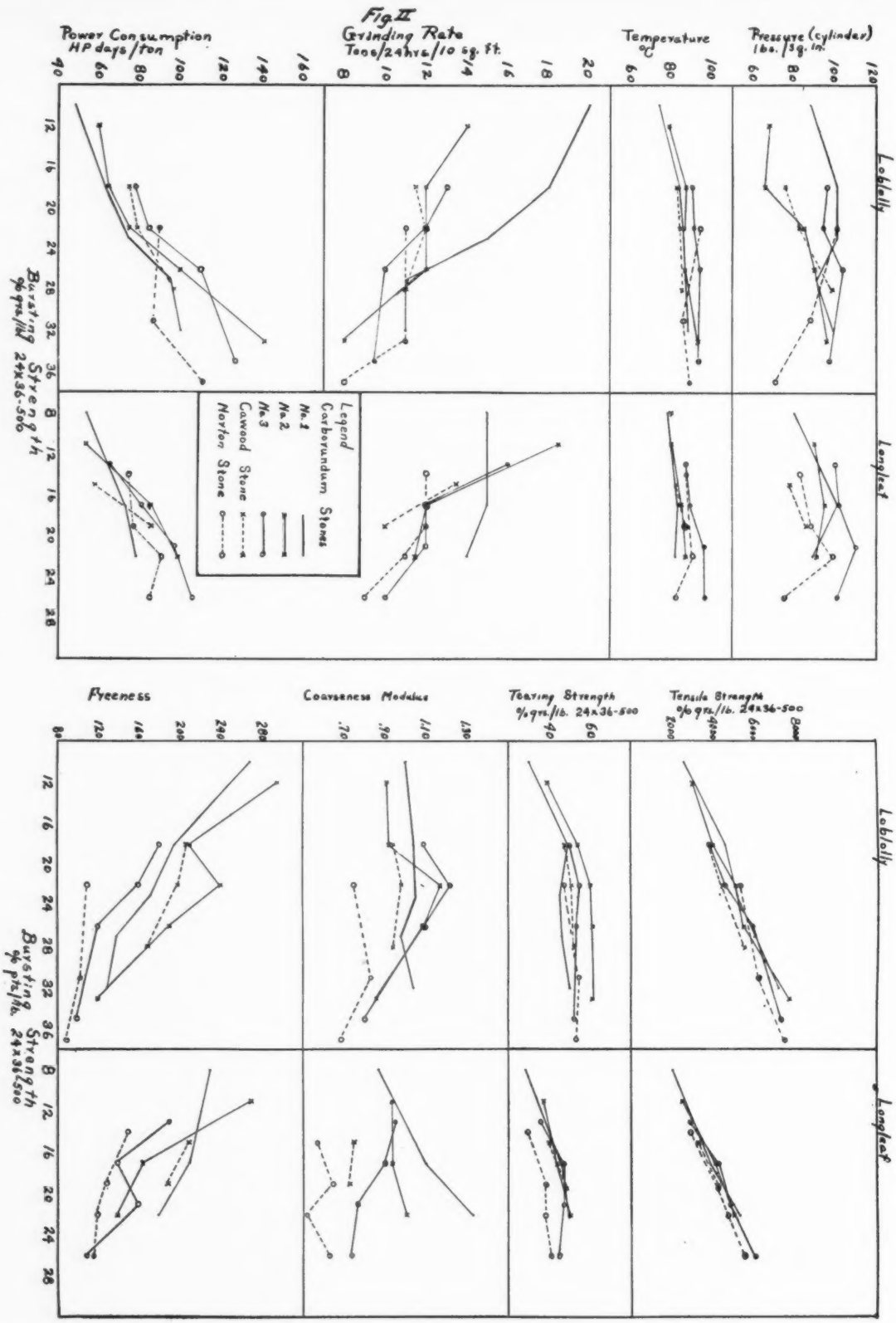
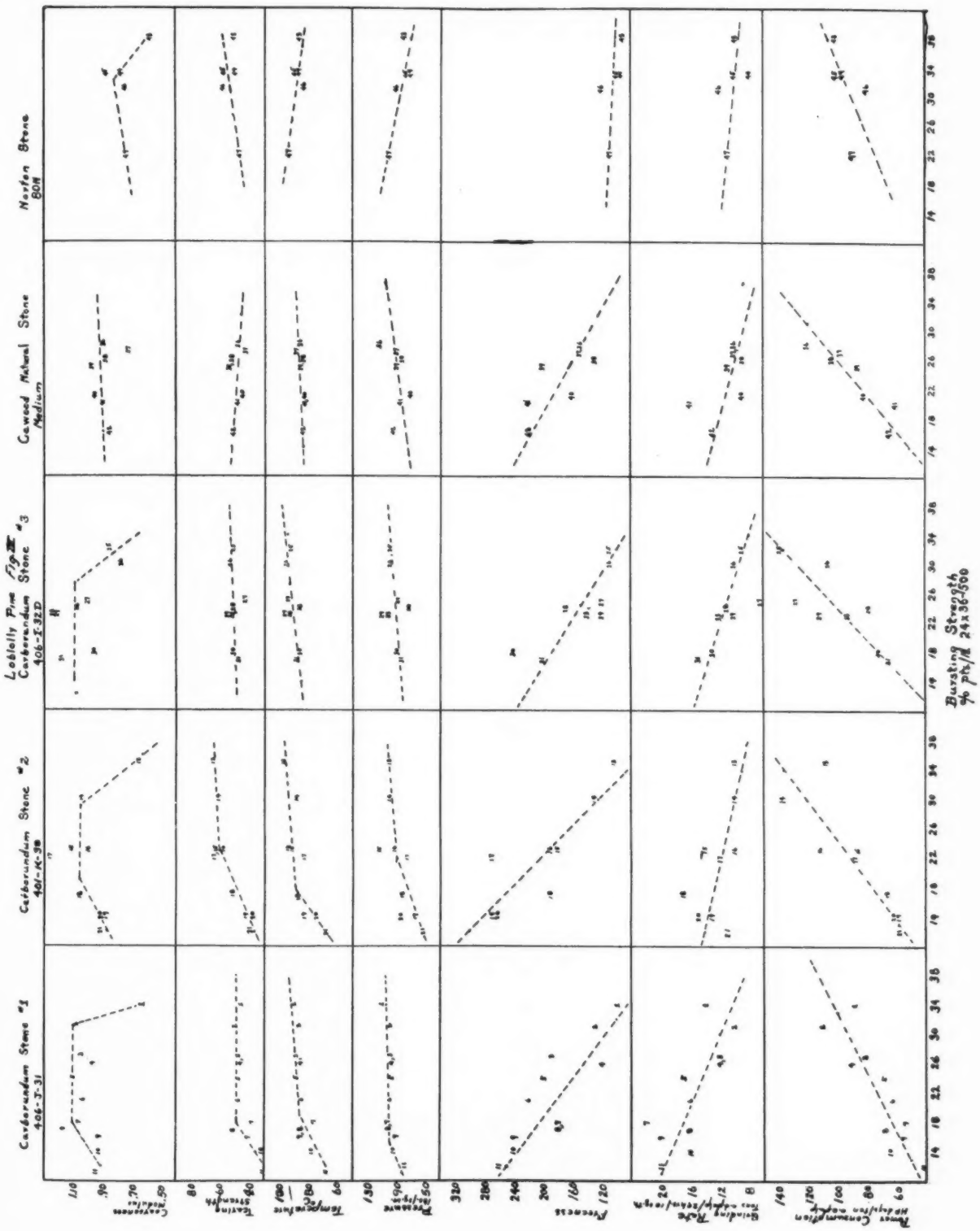


Fig II
Power Consumption HP days/ton
Grinding Rate Tons/24 hrs./10 sq. ft.
Temperature °C
Pressure (cylinder) lbs./sq. in.
Loblolly
Longleaf
Bursting Strength % gm./lb. 24x36-500
Legend
Carborundum Stones
No. 1
No. 2
No. 3
Cawood Stone
Norton Stone
Freeness
Coarseness Modulus
Tearing Strength % gm./lb. 24x36-500
Tensile Strength % gm./lb. 24x36-500
Bursting Strength % pts./lb. 24x36-500


Carborundum Stone #1
406-F-31
Carborundum Stone #2
401-K-38
Loblolly Pine Fig. #3
Carborundum Stone
406-F-32D
Coated Natural Stone
Medium
Norton Stone
80M
Burating Strength
% pts/# 24x36-500
Caliper
Tearing Strength
Temperature
Pressure
Pressure
Rate of rolling/reel/min
Power Consumption
Horsepower output

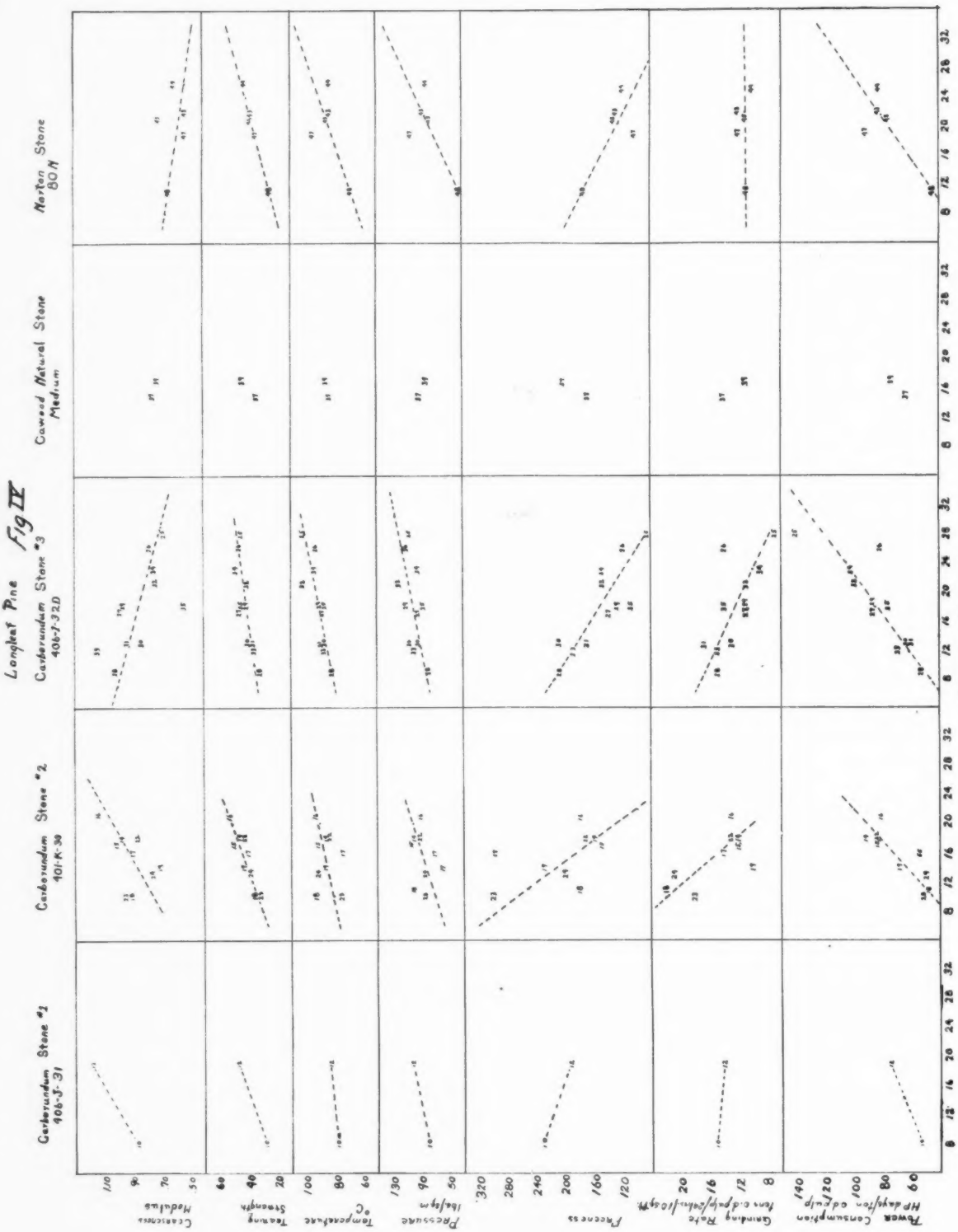

Longleaf Pine
Fig IV
Carborundum Stone #1
406-J-31
Carborundum Stone #2
401-K-30
Carborundum Stone #3
406-J-32D
Cowood Natural Stone
Medium
Norton Stone
80N
Stiffness Modulus
Tearing Strength
Temperature °C
Pressure lbs/sq in
Freeness
Grinding Rate tons d.p./hr./inch of face
Power Consumption HP days/ton d.p.
Bursting Strength % pts/lb. 24-36-500

Fig. V

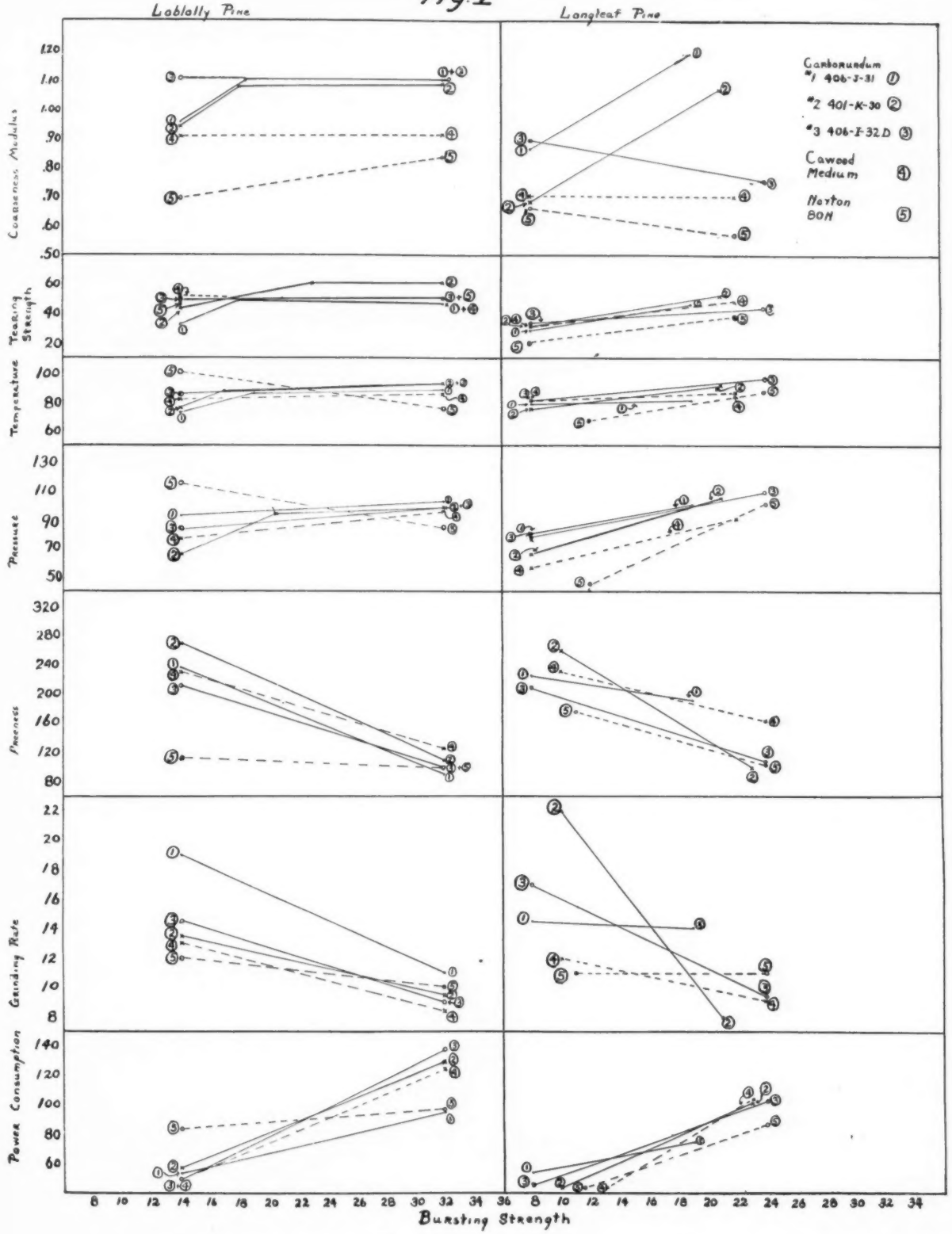

Loblolly Pine
Longleaf Pine
Coarseness Modulus
Tearing Strength
Temperature
Pressure
Freeness
Grinding Rate
Power Consumption
Bursting Strength
Carborundum #1 406-J-31 ①
#2 401-K-30 ②
#3 406-F-32D ③
Cawood Medium ④
Norton 80M ⑤

Table III shows the results and tests of the pulp which was made at the laboratory and used for the commercial run of paper at the Beaver Wood Fibre Company's mill at Thorold, Ont., in 1933.

Table IV shows the results and tests of a continuous 16 hour run made at the laboratory in 1936.

It was found that the two points for the Cawood stone as shown on Fig. 4 were too close together to definitely indicate the trends. The curves for this stone on Fig. 5 were developed from nine points on the same surface. These points are shown in Table V.

Fig. 6 shows a comparison of results obtained for the various stones. The results for freeness, power consumption, coarseness modulus and tear at a burst of 24 per cent are given for loblolly and longleaf. Since only two stones came under this classification for longleaf, a further comparison of longleaf is shown at a burst of 19 per cent. A corresponding comparison is made for loblolly. The results of three spruce groundwood samples tested at the laboratory are also shown for comparison.

TABLE III A.—PINE GROUNDWOOD PULP USED IN TEST COMMERCIAL NEWS PRINT RUN AT BEAVER WOOD FIBRE COMPANY, THOROLD, ONT., NOVEMBER 1, 1933

Volume wood ground	1,506.8	cu. ft.
Average weight of wood oven dry	29.33	lbs./cu. ft.
Total oven dry weight of wood ground	44,194.44	lbs.
Total oven dry weight of wood ground	22.1	tons
Total oven dry weight of pulp produced	39,935	lbs.
Total oven dry weight of pulp produced	19.97	tons
Pulp yield	90.4%	
Total grinding time	122.78	hrs.
Total power consumed	35,107	kw-hr.
Average Int. kw	287	
Average Ind. kw	282	
Grinding temperature	88	deg. C.
Cylinder pressure	103	lbs./sq. in.
Unit pressure on stone	47	lbs./sq. in.
Burr used	9—4½" Sp. and 4 St. Cut	
Grinding rate (wood)	12.9	o.d. tons/24 hrs./
Grinding rate (pulp)	11.6	10 sq. ft.
Power consumption per ton oven dry pulp	1,755 kw-hr.	No motor correction
Power consumption per ton oven dry pulp	98 h.p. days	No motor correction
Power consumption per ton oven dry pulp	1,650 kw-hr.	With motor correction
Power consumption per ton oven dry pulp	92 h.p. days	With motor correction

TABLE III B.—GRINDING AND TEST DATA FOR LOBLOLLY PINE GROUND WOODS USED IN COMMERCIAL RUN AT THOROLD

Run Number	Cylinder Pressure, lbs./sq. in.	Temperature, deg. C.	Freeness	Bursting Strength, per cent pts./lb. 24x36-500	Tearing Strength, per cent grs./lb. 24x36-500	Tensile Strength, per cent grs./lb. 24x36-500	Coarseness Modulus
195	100	87	145	29	48	6200	1.09
196	100	87	165	28	52	5800	...
197	97	86	185	31	59	6200	...
198	98	88	200	28	63	6400	1.34
199	99	89	160	32	55	7500	...
200	98	88	134	32	63	7300	1.14
201	100	86	172	31	59	7100	...
202	99	89	179	33	60	6500	...
203	99	90	172	33	58	7100	1.19
204	98	91	160	35	58	7600	...
205	101	89	172	32	62	6700	...
206	104	89	172	29	65	6500	1.27
207	99	91	179	27	54	6300	...
208	100	88	165	31	53	6600	...
209	106	89	192	28	51	5600	1.27
210	105	90	160	33	57	7100	...
211	106	89	185	30	52	6700	1.13
212	104	88	200	28	50	6100	...
213	104	85	205	24	45	5300	...
214	102	88	200	26	49	5900	1.27
215	108	91	192	27	54	6200	...
216	105	89	192	27	57	5600	...
217	108	87	214	28	54	6500	1.33
218	105	90	192	29	50	6500	...
219	105	90	200	30	56	7100	...
220	105	88	172	33	53	7900	1.36
221	103	89	185	31	61	6700	..
222	110	91	200	33	64	6600	...
223	102	88	192	27	51	6300	1.26
224	104	87	218	25	44	6200	...
225	105	87	218	20	50	4500	...
226	107	89	214	26	55	5800	1.38
227	110	89	218	24	47	5600	...
228	103	88	172	31	50	7000	...
229	104	90	180	28	57	5800	...
230	102	88	192	28	64	5900	1.29
231	101	91	180	32	59	6700	1.28
232	95	86	172	31	57	6600	1.24
Average or Total	103	88	192	29	55	6400	1.26

TABLE IV A.—GRINDER RUN NO. 635—LOBLOLLY PINE

Grinder run number	635
Wood used	Loblolly
Wood shipment number	141
Wood ground	170.81 cu. ft.
Weight oven dry per cu. ft.	28.33 lbs.
Weight oven dry wood	4839 lbs.
Pulp yield	94 per cent
Stone speed, r.p.m.	280
Surface	3079 ft./min.
Pressure cylinder	77.8 lbs./sq. in.
Unit	35.8 lbs./sq. in.
Temperature	86.1 deg. C.
Burrs used	3 Sp. 1½" Lead and 10 Diamond
Grinding rate, tons oven dry pulp/24 hrs./10 sq. ft.	10.23
Power consumption, h.p. days/ton oven dry pulp	83
Grinding time	16 hours
Number pockets used	2

TABLE IV B.—GRINDER RUN NO. 635—LOBLOLLY PINE

Hour Sample Taken	Freeness cc.	Bursting Strength, per cent pts./lb. 24x36-500	Tearing Strength, per cent grs./lb. 24x36-500	Tensile Strength, per cent grs./lb. 24x36-500	Coarseness Modulus
1	250	18	55	3300	1.33
2	240	24	59	5200	1.40
3	160	24	59	4700	1.03
4	200	29	58	5800	1.35
5	200	25	60	5100	1.10
6	160	32	56	6100	1.30
7	200	23	60	5700	1.20
8	230	23	60	4500	1.06
9	180	24	55	5200	0.97
10	230	24	64	4600	1.11
11	220	23	58	4600	1.02
12	220	24	62	5300	1.04
13	240	21	53	4300	1.04
14	220	24	64	5300	1.08
15	200	26	62	5500	0.99
16	180	21	52	5100	0.93
Composite sample	210	24	54	5100	1.09
Numerical average 16 runs	208	24	59	5000	1.12

Fig. 7 gives empirical grading of the various stones according to their relative values as shown in Fig. 6 of (A) freeness and power consumption and (B) freeness, power consumption and coarseness modulus. The position numbers were added together to obtain the values. The lower values indicate the better performance.

Discussion of Results

Fig. 2 indicates the considerable difference in results obtained with the various stones regardless of the burr pattern used. Figs. 3, 4 and 5 indicate similar differences and show that the condition of the stone surface for a particular stone determines the results obtained.

These figures also indicate a marked difference in the pulping characteristics of loblolly and longleaf. The loblolly in all cases gives the better results. However, less work has been done with longleaf.

The results shown are *average values* of all runs made at the laboratory. We feel that the variations in results are the result of operating and wood variables.

Tables III and IV show that after a suitable surface has been obtained on the stone the pulp produced stays comparatively constant over a long period of time. In the case of the artificial stone used for the run shown in Table III the duration was 123 hours. In the run shown in Table IV made on a natural stone, the duration was 16 hours. This same surface was used for 134 hours in all without appreciable change in the pulp produced.

Fig. 6 indicates how the various pulp properties are affected by the use of the various stones. A marked difference is shown between the coarsest grit stone Carborundum No. 2 and the finest grit stone, the Norton. If this difference has resulted from going from a very fine grit to a medium grit, it seems logical that a similar difference can be obtained by going to a still coarser grit.

TABLE V.—LONGLEAF CAWOOD STONE

Stone Surface 3—1½ Sp. and 10 Dia.

Number of Runs	Cylinder Pressure, lbs./sq. in.	Temperature, deg. C.	Grinding Rates, tons o.d. pulp/24 hrs./10 sq. ft.	Power Consumption, h.p. days/ton o.d. pulp	Freeness, cc.	Bursting Strength, per cent pts./lb. 24x36-500	Tearing Strength, per cent grs./lb. 24x36-500	Tensile Strength, per cent grs./lb. 24x36-500	Coarseness Modulus
1	89	83	11.7	75	200	20	56	4600	0.79
2	76	84	13.3	54	210	14	41	3500	0.74
3	68	81	12.8	52	240	12	36	2400	0.69
4	76	83	12.9	56	210	16	46	3300	....
5	78	86	11.6	64	220	16	40	3900	0.81
6	87	84	9.8	81	210	17	42	3800	0.77
7	96	87	11.9	77	190	19	48	4200	0.70
8	83	88	8.4	95	180	19	44	4200	0.65
9	74	86	6.9	101	190	21	44	4600	0.71

Fig. 7 indicates empirically relative values of the various stones. From this, Carborundum stones Nos. 1 and 2 gave the best all around results. In the case of highest strength for longleaf however, Carborundum No. 3 and the Norton stones were better. This method of comparison is not conclusive because other factors such as ease of operation cannot be evaluated numerically.

The spruce samples tested were not average pulps but were taken at random. We judge that they represent a very good grade of pulp for newsprint.

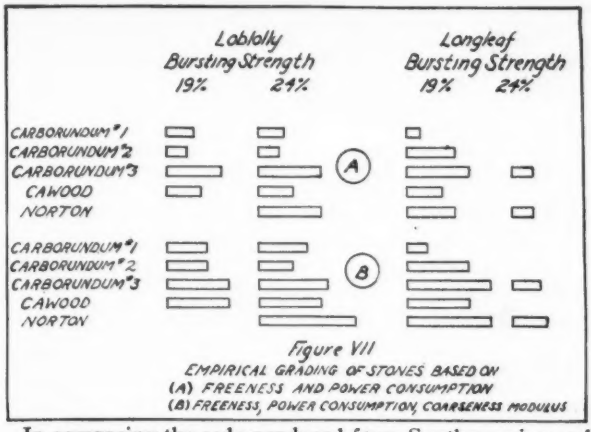


Figure VII

EMPIRICAL GRADING OF STONES BASED ON
(A) FREENESS AND POWER CONSUMPTION
(B) FREENESS, POWER CONSUMPTION, COARSENESS MODULUS

In comparing the pulp produced from Southern pine and spruce, it is indicated that for the same burst value, the freeness tends to be somewhat lower in the case of pine. That this lower freeness is within commercial limits is verified by L. C. Anderson, (*5*).

Papermaking Qualities

The final answer to the suitablity of groundwood for papermaking is given by its behavior on the paper machine

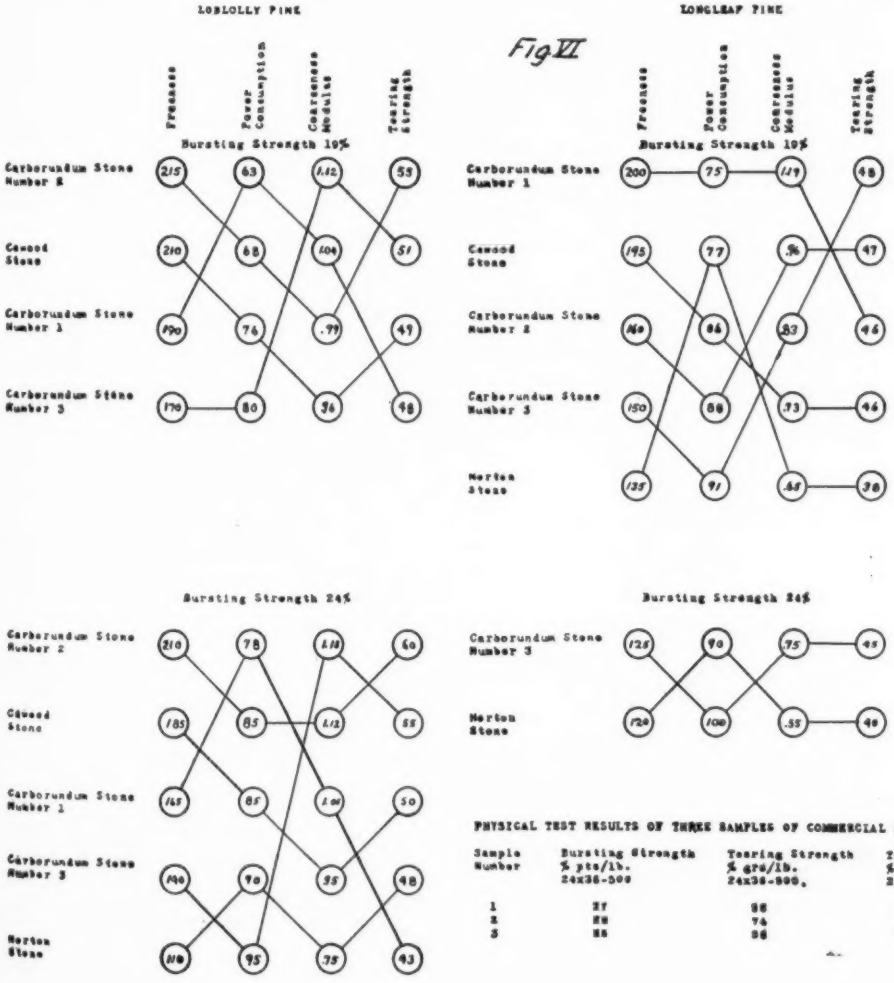


Fig VI

PHYSICAL TEST RESULTS OF THREE SAMPLES OF COMMERCIAL SPRUCE GROUNDWOOD PULPS

Sample Number	Bursting Strength % pts/lb. 24x36-500	Tearing Strength % grs/lb. 24x36-500,	Tensile Strength % grs/lb. 24x36-500	Freeness cc.	Coarseness Modulus
1	27	56	6500	230	1.07
2	20	74	5400	265	1.27
3	25	56	7100	180	1.35

and the printing presses. The suitability of Southern pine groundwood, judged by machine operation, is verified by Mr. Anderson (*5*) and the officials of the Beaver Wood Fibre Company, Ltd. (*6*). Satisfactory action on printing presses was demonstrated by nine Georgia newspapers (*6*).

Conclusions

It has been demonstrated that groundwood pulp suitable for the manufacture of newsprint has been produced at the Pulp and Paper Laboratory from the average run of young loblolly, longleaf and slash pines. The results indicate that coarser grit stones should be investigated, possibly much coarser than have been used for spruce. Furthermore, the results point out the desirability of investigating the other factors of stone structure such as shape of grit, hardness and porosity.

The results have been obtained from stones which are considered suitable for spruce. Stones are now being built for our use, the construction of which is based on the experience with the peculiar characteristics of Southern pine.

We feel it is reasonable to assume that as great an improvement can be made in stones for use with pine as has been made in stones for use with spruce during the past ten years.

Future Work

Future work contemplated at the laboratory consists of:

(a) Development of stones.
(b) Investigation of various combinations of groundwood of varying properties.
(c) Investigation of the current trend toward coarse grinding and refining.
(d) Investigation of pretreatment of wood with the idea of possible decrease or elimination of chemical pulp in newsprint.

Acknowledgments

We wish to extend our appreciation to the Carborundum Company, the Norton Company and the Cawood Company for their cooperation in supplying us with pulpstones.

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(6) Deserted Village No. 2, Chemical Foundation, New York, N. Y. (Feb. 19, 1934).

Report on Paper Testing

FIRST REPORT OF THE PAPER TESTING COMMITTEE TO THE TECHNICAL SECTION OF THE PAPER MAKERS' ASSOCIATION. London, Paper Makers' Association of Great Britain and Ireland, 1936. 85 pp. 28 illustrations. Price 3/6d (post free).

This book is the first official English publication dealing with the question of paper testing. In part, it corresponds to the TAPPI Standards, but it gives more information regarding the various tests discussed. The selection for the present report was based upon a questionnaire circulated to members of the Paper Makers' Association. "Due notice has also been taken of paper-testing specifications made by other bodies both at home and abroad, and wherever possible uniformity has been secured, although it has not always been possible to secure complete unanimity owing to the conditions and types of instrument established in different countries, and in different paper-using industries."

The contents of the present volume include the following: Sampling paper for testing; conditioning of paper test samples; paper substance (ream weight) determination; the folding test: specification of method using the Schopper tester; the tearing test: specification of method using the Marx-Elmendorf tester; the bursting test: specification of method using the Mullen tester; specification of method using the Ashcroft tester; the air permeability test: specification of method due to T. Trevor Potts; specification of method using the Gurley densometer; the tensile test: specification of method using the Schopper tester; notes on the application of statistics to paper testing.

As an example of the matter discussed, following the general statement of the tearing test, there are paragraphs on: theoretical considerations. The effect of the preliminary split in the tearing test samples, the effect of a ragged end to the preliminary tearing slit, the effect of improperly levelling the tearing tester, the effect of stopping the pendulum of the Marx-Elmendorf tearing tester after the completion of the first half-swing, effect of tearing multiple sheets, effect of the length of the tear of cutting multiple sheets in the cutter, the effect of clamping and comparison of Marx-Elmendorf and Poller-Elmendorf tearing testers; in each case actual test data are given to illustrate the effect discussed.

The following sentence is interesting: "It was found that instruments made abroad were very well established and that on the whole British manufacturers had not been very active in the field of paper-testing instruments." Only four firms were found who manufactured testing instruments, two making tensile testers and two folding testers (both the M.I.T. type).

It would seem that everyone interested in paper testing should have a copy of this work.

CLARENCE J. WEST.

Belgian Paper Mills Active

WASHINGTON, D. C., September 13, 1937—All paper mills in Belgium are now operating at full capacity on orders for delivery within 4 to 6 months. The demand for paper, however, has been reported to have fallen off recently, due partly to the existing large stocks on hand and also to seasonal slackness. The quiet turn which it has taken recently has been welcomed by manufacturers who in some cases have found it impossible to fill orders on hand. They are confident that after this slow-down the flow of orders will resume its favorable trend by September.

Belgian paper importers are still confronted with the difficulty of obtaining supplies from their usual sources. Foreign paper manufacturers are apparently amply supplied with orders and are declining to make quotations for the Belgian market. It is reported that the domestic requirements for such products as duplex paper board and kraft paper cannot be met. As foreseen, prices have in general increased by 10 to 15 per cent in the course of the quarter under review. According to the statement of leading Belgian importers, this market should afford a good outlet for wrapping paper which could be delivered at prices varying between $60 and $80 per ton; kraft paper, with a range price of $70 to $90 per ton; and writing and printing papers in the range of $80 to $100 per ton in lots of 10 to 100 tons in seconds, job lots, clearance.

Paperboard Industry Runs at 72 Per Cent

Monthly statistics in paperboard .012 of an inch in thickness for July compared with the preceding month have just been released by Director William L. Austin, Bureau of the Census, Department of Commerce. The statistics were compiled from data furnished by the National Paperboard Association from reports of members and by manufacturers reporting direct to this Bureau.

Production For July

The production of paperboard for July, 1937, amounted to 344,080 short tons, or 72.9 per cent of the rated capacity of the mills reporting. The ratio of inch hours of operation to rated capacity for July, 1937, was 69.8 per cent, as compared with 75.5 per cent for June, 1937, 71.1 per cent for July, 1936, and 60.3 per cent for July, 1935.

TABLE I.—INCH HOURS OPERATED, PRODUCTION, AND ORDERS (99 MANUFACTURERS FOR MONTHS OF 1937, AND 95 FOR MONTHS OF 1936 AND 1935)

Year and Month	Operated (Inch hours) (Based on last dryer width) Rated capacity	Operation for month	Per cent of rated capacity	Production (Short tons) Rated capacity	Production during month	New orders received during month (short tons)	Unfilled orders, end of month (short tons)
1937							
Jan.	15,359,197	12,245,898	79.7	445,686	365,665	407,716	221,409
Feb.	14,277,332	12,327,520	86.3	414,796	373,431	386,781	236,011
Mar.	16,366,534	14,171,655	86.6	467,701	428,506	453,621	265,575
Apr.	15,525,766	13,892,463	89.5	451,340	418,665	404,108	200,833
May	15,468,886	13,379,968	86.5	450,211	408,497	356,687	154,379
June	15,594,669	11,774,735	75.5	453,156	363,390	315,787	100,785
July	16,246,317	11,346,605	69.8	472,031	344,080	326,334	90,391
Total (7 mos.)	108,838,701	89,138,844	81.9	3,154,921	2,702,234	2,651,034	.....
1936							
Jan.	15,251,225	9,970,298	65.4	427,564	271,210	284,854	95,358
Feb.	14,173,988	9,682,428	68.3	396,354	271,107	268,843	91,917
Mar.	14,583,725	10,128,474	69.5	411,199	285,257	290,854	96,202
Apr.	14,630,429	10,495,934	71.7	412,267	295,899	297,984	99,796
May	14,497,925	10,140,595	69.9	407,729	289,527	280,899	92,784
June	14,545,973	10,186,905	70.0	409,510	288,682	290,098	96,402
July	15,057,386	10,699,561	71.1	431,139	299,033	304,747	101,557
Total (7 mos.)	102,740,651	71,304,195	69.4	2,895,762	2,000,715	2,018,279	.....
Aug.	14,545,972	11,122,150	76.5	416,338	319,391	332,553	117,443
Sept.	14,466,821	11,359,779	78.5	415,126	328,519	353,197	135,732
Oct.	15,189,530	12,669,229	83.4	435,081	359,849	357,783	138,830
Nov.	14,097,513	11,350,376	80.5	403,871	321,624	308,732	127,193
Dec.	15,177,270	11,537,682	76.0	434,969	328,773	350,452	130,472
Total (Year)	176,217,757	129,343,411	73.4	5,001,147	3,658,871	3,720,996	.....
1935							
Jan.	15,455,578	9,793,592	63.4	416,501	262,026	273,151	80,987
Feb.	13,636,918	9,308,323	68.3	366,598	251,870	252,578	84,341
Mar.	14,709,922	10,029,490	68.2	398,949	275,770	268,360	79,049
Apr.	14,901,848	9,543,895	64.0	402,831	260,851	255,730	79,296
May	15,498,589	9,615,348	62.0	418,324	262,463	259,995	80,367
June	14,284,978	9,418,123	65.9	385,742	256,665	248,656	78,020
July	15,592,118	9,397,786	60.3	423,545	260,207	259,486	78,241
Total (7 mos.)	104,079,951	67,106,557	64.5	2,812,490	1,829,852	1,817,956	.....
Aug.	15,592,118	10,450,399	67.0	423,545	291,127	297,349	86,767
Sept.	14,380,430	10,273,750	71.4	390,840	289,596	307,103	105,088
Oct.	16,108,039	12,404,641	77.0	434,717	345,596	351,887	107,074
Nov.	13,598,280	10,526,226	77.4	399,897	294,290	272,477	88,971
Dec.	14,770,746	8,818,058	59.7	400,139	243,594	234,753	81,894
Total (Year)	178,529,564	119,579,631	67.0	4,861,628	3,294,055	3,281,523	.....

TABLE II.—CONSUMPTION AND STOCKS OF WASTE PAPER (85 MANUFACTURERS)

Year and Month	Consumption of waste paper (Short tons) Rated capacity	Consumed during month	Per cent of rated capacity	Stocks of waste paper at plants, end of month (short tons)
1937				
January	371,916	295,554	79.5	211,295
February	344,832	295,477	85.7	196,570
March	389,546	339,242	87.1	197,977
April	376,091	341,597	90.8	211,628
May	374,605	330,250	88.2	234,239
June	376,081	287,504	76.4	257,185
July	389,069	274,463	70.5	254,554
Total (7 months)	2,622,140	2,164,087	82.5	.....
1936				
January	370,319	229,064	61.9	216,040
February	343,024	226,216	65.9	193,919
March	356,763	237,601	66.6	204,376
April	356,829	245,738	68.9	204,353
May	356,463	241,895	67.9	213,435
June	359,359	241,656	67.2	218,330
July	371,692	249,402	67.1	219,042
Total (7 months)	2,514,449	1,671,572	66.5	.....
August	359,360	268,770	74.8	207,886
September	357,870	281,046	78.5	191,408
October	376,498	306,874	81.5	189,590
November	349,317	274,332	78.5	182,822
December	376,053	279,068	74.2	199,404
Total (Year)	4,333,547	3,081,662	71.1	.....
1935				
January	359,167	210,812	58.7	210,520
February	322,920	211,560	65.5	214,069
March	345,236	231,584	67.1	207,987
April	347,845	217,300	62.5	214,680
May	361,312	219,767	60.8	222,519
June	334,875	213,523	63.8	230,365
July	366,084	217,934	59.5	233,784
Total (7 months)	2,437,439	1,522,480	62.5	.....
August	366,084	246,537	67.3	288,137
September	337,395	244,963	72.6	220,998
October	373,312	288,668	77.3	214,685
November	345,005	246,318	71.4	213,297
December	344,705	196,429	57.0	211,029
Total (year)	4,203,940	2,745,395	65.3	.....

First Visualization of Heat

Realizing that today, as never before, industrial advancement hinges to a large extent upon the more effective utilization of heat, industry is constantly striving toward perfection in the art and science of heat conservation. The latest important contribution towards this goal is the sound motion picture "Heat and Its Control" produced by Johns-Manville.

The importance of this contribution lies in the fact that this talkie makes available for the first time an actual visualization of what heat is, and the story of its use and methods of conservation.

The first official showing of "Heat and Its Control" was attended by 150 representatives of the industrial and technical press at New York City, September 9.

At the same time, Johns-Manville announced publication of an authoritative handbook "Heat" which supplements the movie, covering approximately the same ground in greater detail.

"Heat and Its Control" filmed by Caravel Films, Inc., visualizes the story of heat from the time man worshipped the sun, to present day methods of development and manufacture of heat conservation materials.

"Heat" contains 48 pages, each of which has at least one illustration. These books will be given to each person attending a showing of "Heat and Its Control", or may be had on request from Johns-Manville, 22 East 40th St., New York, N. Y.

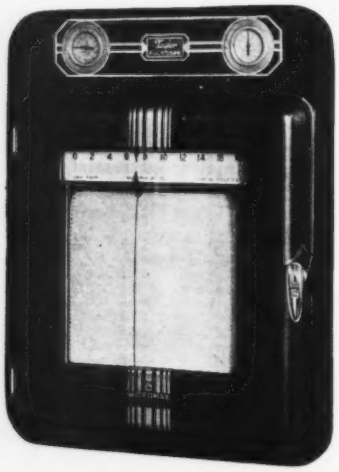
The picture will be shown at engineering society meetings and at special showings to other interested groups. All arrangements for such programs will be handled by Johns-Manville district organization.

France Increases Duty Free Newsprint

WASHINGTON, D. C., September 8, 1937—In a decree published in the Journal Official the French customs authorities increased by 22,000 metric tons the amount of newsprint paper which will be admitted free of duty during the year 1937, according to a report from Acting Commercial Attache D. J. Reagen at Paris. The quota for such free admission was previously fixed at 25,000 tons per annum.

Taylor Fulscope Micromax Controller

For those process control problems where smooth, proportional valve action is imperative and the potentiometer principle of temperature measurement is preferred, the Taylor Instrument Companies, Rochester, New York, now offer the Fulscope Micromax Air-operated Potentiometer Controller.



It utilizes the same completely adjustable, air-operated control mechanism that is used in the thousands of Fulscope temperature, pressure, rate of flow, and liquid level controllers now in service.

The temperature measuring system is the well known Micromax recording and indicating potentiometer. This is the only potentiometer in which all functions affecting accuracy of temperature measurement are fully automatic—automatic reference-junction compensation; automatic, positive balancing of the potentiometer circuit; and automatic current standardization.

The principal parts of both mechanisms are interchangeable with the many Fulscope and Micromax instruments now in service. This permits small stocks of replacement parts, lower maintenance costs, and better service.

The Fulscope Control Unit operates in conjunction with the Taylor Motosteel Diaphragm Valve. Where precision valve action, or both precision valve action and compensation for changes in load, may be necessary to prevent deviation from the control point, the Fulscope control mechanism can be supplemented with the Taylor Valv-Precisor or Dubl-Response Control Unit, respectively. Thus, control equipment which most economically solves the individual control problem may be selected. Write for Taylor Catalog 101R.

Wages Show Increase in Paper Centers

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, September 13, 1937—Dayton paper mills, box manufacturers, novelty concerns, papeterie and stationery makers, and machinery used in pulp and paper mills contributed substantially to the immense payroll total reported here the past week.

The figures, released by A. C. Wolf, secretary and manager of the Dayton Clearing House Association, reported that the payroll for the first eight months of the year was approximately 38 per cent higher than for the corresponding period of 1936 and almost $6,000,000 greater than for the whole of 1935.

For the first eight months of 1936, the total was $46,597,491.78 while for the same period of the current year, the total mounted to $63,281,115.74.

The total for all of 1935 was in excess of $57,-651,000, thus reflecting the gradual increase. For the first eight months of 1935, the figure was $36,680,-650.16. The total for all of 1936 was $74,531,527.31.

This year's August figure was slightly below that for July of 1937, for which it was $8,581,881.14. The decrease as compared between the two months is explained as being seasonable, taking into consideration the fact inventory and vacation periods fall largely in August.

Postmaster C. N. Greer reported that August postal receipts, a sure indication of which way the trade winds are blowing, were the highest for that month in Dayton's history.

The postal receipts for the month amounted to $217,069, a 6.29 per cent increase over the August, 1936, total of $204,224, which also was a record.

The past year's postoffice receipts here were above $3,000,000. In Middletown, the Paper City, the postal business has shown a gain of $14,000 for the first six months of the year over the corresponding period of 1936 according to Acting Postmaster George Sebald.

The total receipts in that paper mill center was $113,923.95 for this year, to date, compared with $100,138.97 for the first half of 1936. The Middletown office issued 38,499 money orders, compared with 34,397 for the first six months of 1936.

The total pieces of mail increased from 2,579,212 to 3,756,247 for the same periods in Middletown. Corresponding increases have been made in Dayton which shows that the consumption of paper is markedly on the increase, because of improved business, making the printing of sales matter an important feature of the paper trade. Publishers and printers have likewise enjoyed a greater period of prosperity.

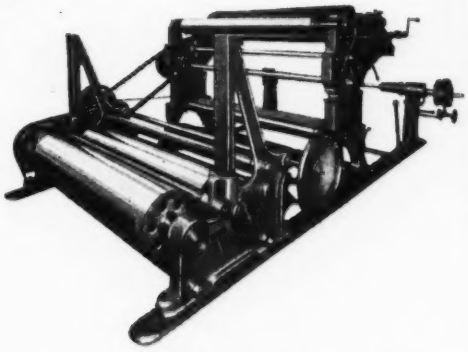
Screening Board Dutiable at 35 Per Cent

After having the evidence under consideration for a year, the United States Customs Court has held that fifteen shipments of 60-pound screening board imported from Canada for a Milwaukee box manufacturer was dutiable at 35 per cent plus 3 per cent excise tax. The importer claimed the board was dutiable at 10 per cent, but the Detroit Customs officials produced statements from the Canadian Customs officials showing that such board if imported into Canada would be dutiable at 35 per cent plus 3 per cent excise tax. The Customs Court, therefore, acting under the countervailing duty provision of the Tariff Act (since repealed by the reciprocal trade agreement act) held the proper rate of duty to be the same as would be charged by Canada if imported into that country. The case was initiated in 1934 on complaint of the Import Committee of the American Paper Industry and was repeatedly on the dockets of the Customs Court at Detroit and Chicago until finally tried on June 1936.

Speed Control Transmissions

Catalogue No. 35, describing and illustrating variable speed transmissions and speed controlling devices, has been issued by the Lewellen Manufacturing Company, of Columbus, Ind. The attractively printed 48-page booklet describes the principles of operation of the company's products, illustrates special applications and supplies useful tables of motor sizes and speed ranges.

TINTER AND OVERPRINTER



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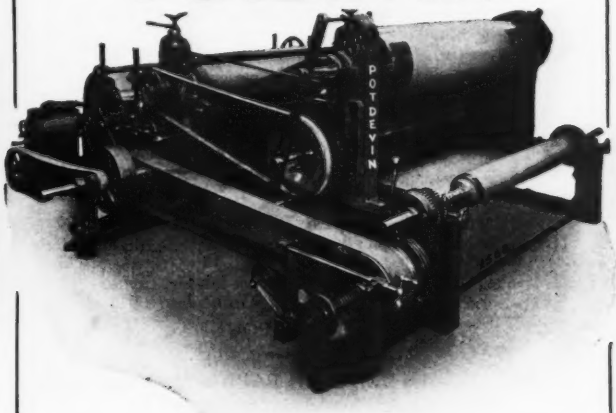

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New York Imports

WEEK ENDING SEPTEMBER 11, 1937

SUMMARY

Cigarette paper .....20 cs.
Wall paper .....4 rolls, 15 bxs., 2 cs.
Paper hangings .....8 bls., 1 cs.
Newsprint .....1,825 rolls
Printing paper .....80 crates, 97 cs.
Wrapping paper .....770 rolls, 20 cs.
Filter paper .....63 pkgs., 23 cs.
Filter compound .....70 cs.
Drawing paper .....6 cs.
Surface coated paper .....50 crates, 42 cs.
Metal paper .....1 cs.
Decalcomania paper .....40 drums, 4 cs.
Decalcomanias .....31 cs.
Tissue paper .....4 cs.
Colored paper .....1 ble., 2 cs.
Boards .....50 bls.
Miscellaneous paper .....16 pkgs., 354 rolls, 183 bls., 36 cs.

CIGARETTE PAPER

Standard Products Corp., *Paris,* Havre, 20 cs.

WALL PAPER

F. J. Emmerich, *Scythia,* Liverpool, 1 cs.
Globe Shipping Co., *Hamburg,* Hamburg, 4 rolls.
S. K. Lonegren, *Kungsholm,* Gothenburg, 15 bxs.
———, *Europa,* Bremen, 1 cs.

PAPER HANGINGS

W. H. S. Lloyd & Co., *American Trader,* London, 8 bls., 1 cs.

NEWSPRINT

———, *Bergensfjord,* Oslo, 262 rolls.
Jay Madden Corp., *New York,* Hamburg, 237 rolls.
Perkins Goodwin & Co., *New York,* Hamburg, 220 rolls.
Perkins Goodwin & Co., *Hamburg,* Hamburg, 250 rolls.
Jay Madden Corp., *Scanmail,* Wiborg, 169 rolls.
Lunham & Reeve, Inc., *Scanmail,* Wiborg, 383 rolls.
H. G. Craig Co. Inc., *A. C. D.,* Donnacona, 304 rolls.

PRINTING PAPER

Dingelstedt & Co., *New York,* Hamburg, 94 cs., 80 crates.
———, *Hamburg,* Hamburg, 3 cs.

WRAPPING PAPER

Guaranty Trust Co., *Kungsholm,* Gothenburg, 770 rolls.
———, *Hamburg,* Hamburg, 20 cs.

FILTER PAPER

H. Reeve Angel & Co. Inc., *Queen Mary,* Southampton, 63 pkgs.
H. Reeve Angel & Co. Inc., *American Trader,* London, 14 cs.
E. H. Sergent & Co., *Kungsholm,* Gothenburg, 9 cs.

FILTER COMPOUND

H. Reifenberg, *Hamburg,* Hamburg, 70 cs.

DRAWING PAPER

H. Reeve Angel & Co. Inc., *American Trader,* London, 2 cs.
Devoe & Raynolds Co., Inc., *American Trader,* London, 4 cs.

SURFACE COATED PAPER

Globe Shipping Co., *New York,* Hamburg, 50 crates.
C. Happel, *New York,* Hamburg, 3 cs.
Gevaert Co. of America, *Black Falcon,* Antwerp, 33 cs.
J. J. Gavin, *Hamburg,* Hamburg, 6 cs.

METAL PAPER

Schenkers, Inc., *New York,* Hamburg, 1 cs.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., *American Shipper,* Liverpool, 4 cs., 40 drums.

DECALCOMANIAS

Sellers Transportation Co., *Europa,* Bremen, 31 cs.

TISSUE PAPER

F. C. Strype, *American Shipper,* Liverpool, 4 cs.

COLORED PAPER

C. H. Asche & Co., *Black Falcon,* Antwerp, 2 cs., 1 ble.

BOARDS

Miller Paper Co., *Kungsholm,* Gothenburg, 50 bls.

MISCELLANEOUS PAPER

E. Fougera & Co., *Paris,* Havre, 15 cs.
National City Bank, *Ile de France,* Havre, 16 pkgs.
F. L. Kramer & Co., Inc., *Kungsholm,* Gothenburg, 167 rolls, 183 bls.
The Borregaard Co. Inc., *Kungsholm,* Gothenburg, 187 rolls.
Corn Exchange Bank, Trust Co., *Kinai Maru,* Kobe, 21 cs.

RAGS, BAGGINGS, ETC.

J. J. Ryan & Sons, *New York,* Hamburg, 100 bls. cotton waste.
———, *Transylvania,* Glasgow, 65 bls. paper stock.
E. J. Keller Co. Inc., *Edam,* ———, 122 bls. rags.
———, *Black Falcon,* Antwerp, 64 bls. cotton waste.
Hughes Fawcett, Inc., *Black Falcon,* Antwerp, 5 bls. flax waste.
D. Benedetto, Inc., *Black Falcon,* Antwerp, 86 bls. rags.
Harris Goldman Co., *Black Falcon,* Rotterdam, 172 bls. bagging.
———, *Scythia,* Liverpool, 58 bls. rags.
———, *American Shipper,* Manchester, 86 bls. paper stock, 71 bls. bagging.
Manufacturers Trust Co., *American Shipper,* Liverpool, 8 bls. rags.
Hicks Costarino Co. Inc., *McKeesport,* Manchester, 37 bls. new cuttings.
Manufacturers Trust Co., *McKeesport,* Liverpool, 18 bls. rags.
Chase National Bank, *Gerolstein,* Antwerp, 146 bls. jute waste.
Manufacturers Trust Co., *Gerolstein,* Antwerp, 8 bls. rags.
———, *Gerolstein,* Antwerp, 43 bls. rags.
R. J. Ross & Co. Inc., *Utsire,* Alexandria, 382 bls. rags.
Banco Coml. Italiane Trust Co., *Utsire,* Alexandria, 217 bls. bagging.
Castle & Overton, Inc., *Utsire,* Alexandria, 317 bls. rags.
Hicks Costarino Co. Inc., *Utsire,* Alexandria, 156 bls. rags.
Keene, Inc., *Utsire,* Alexandria, 144 bls. rags.
E. J. Keller Co. Inc., *Utsire,* ———, 482 bls. paper stock, 160 bls. bagging.
———, *Examiner,* Tunis, 170 bls. rags.
J. T. Flannery, *Examiner,* Casablanca, 116 bls. bagging.

GLUE STOCK

American Express Co., *Scythia,* Liverpool, 640 bags hide cuttings.
Trans-Atlantic Animal By-Products, *Statendam,* Rotterdam, 300 bags boneglue.
Trans-Atlantic Animal By-Products, *Hamburg,* Hamburg, 200 bags boneglue.

CHINA CLAY

English China Clays Sales Corp., *Scythia,* Liverpool, 160 bags.

WOOD PULP

———, *Statendam,* Rotterdam, 930 bls. wood pulp.
Chase National Bank, *Bergensfjord,* Oslo, 300 bls. sulphite.
J. Andersen & Co., *Bergensfjord,* Oslo, 2,500 bls. sulphite.
Castle & Overton, Inc., *New York,* Hamburg, 1,065 bls. wood pulp, 163 tons.
A. Giese & Son, *Black Osprey,* Rotterdam, 10 cases wood pulp.
———, *Wanja,* Hernosand, 6,003 bls. sulphate, 1,000 tons.
———, *Wanja,* Hernosand, 4,950 bls. sulphite, 788 tons.
Johaneson Wales & Sparre, Inc., *Wanja,* Sundsvall, 1,425 bls. sulphite, 275 tons.
Johaneson Wales & Sparre, Inc., *Wanja,* Sundsvall, 120 bls.

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KELLNER-PARTINGTON PAPER PULP CO., LTD.
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Edsvalla, Sweden
Hallein & Villach, Austria

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BERGVIK OCH ALA NYA AKTIEBOLAG
Söderhamn, Sweden
CELLULOSEFABRIKS A.-G.
Bratislava, Czecho-Slovakei
SVANÖ AKTIEBOLAG
Svanö, Sweden

knotter pulp, 20 tons.
Johaneson Wales & Sparre, Inc., *Wanja,* Sundsvall, 150 bls. kraft sulphate, 25 tons.
Johaneson Wales & Sparre, Inc., *Wanja,* Sundsvall, 200 bls. chemical pulp, 40 tons.
Mead Sales Co. Inc., *Wanja,* Sundsvall, 210 bls. chemical pulp, 42 tons.
Bulkley Dunton Pulp Co. Inc., *Wanja,* ——, 4,700 bls. sulphite, 800 tons.
Bulkley Dunton Pulp Co., Inc., *Wanja,* ——, 600 bls. kraft sulphate, 100 tons.
Bulkley Dunton Pulp Co. Inc., *Wanja,* ——, 3,000 bls. chemical pulp, 600 tons.
Lagerloef Trading Co., *Scanmail,* Wiborg, 4,175 bls. sulphite, 325 tons.
Lagerloef Trading Co., *Scanmail,* Wiborg, 1,375 bls. mechanically ground pulp, 275 tons.
Lagerloef Trading Co., *Scanmail,* Helsingfors, 260 bls. mechanically ground pulp, 52 tons.
Lagerloef Trading Co., *Scanmail,* Helsingfors, 2,400 bls. sulphite, 403 tons.
Lagerloef Trading Co., *Scanmail,* Helsingfors, 900 bls. sulphate, 150 tons.
Bank of N. Y. Trust Co., *Hamburg,* Hamburg, 555 bls. wood pulp, 111 tons.
Price & Pierce, Ltd., *Kungsholm,* Gothenburg, 375 bls. unbleached sulphite.

WOOD PULP BOARDS

Jay Madden Corp., *Scanmail,* Wiborg, 490 bls., 154 rolls.
Jay Madden Corp., *Scanmail,* Helsingfors, 22 bls.
——, *Hamburg,* Hamburg, 110 cases.
Wilkinson Bros. & Co. Inc., *Kungsholm,* Gothenburg, 20 rolls.
H. Fuchs & Son, *Kungsholm,* Gothenburg, 195 crates.
Salwen Paper Co., *Kungsholm,* Gothenburg, 5 bls.

NEWARK IMPORTS

WEEK ENDING SEPTEMBER 11, 1937

H. G. Craig Co. Inc., *Newscarrier,* Donnacona, 313 rolls newsprint.

ALBANY IMPORTS

WEEK ENDING SEPTEMBER 11, 1937

Castle & Overton, Inc., *Scanmail,* Wiborg, 3,146 bls. wood pulp, 618 tons.
Lagerloef Trading Co., *Scanmail,* Wiborg, 3,865 bls. sulphite, 750 tons.
Lagerloef Trading Co., *Scanmail,* Wiborg, 932 bls. sulphate, 164 tons.
Lagerloef Trading Co., *Scanmail,* Helsingfors, 130 bls. sulphate, 26 tons.
Lagerloef Trading Co., *Scanmail,* Helsingfors, 433 bls. sulphite, 72 tons.

BOSTON IMPORTS

WEEK ENDING SEPTEMBER 11, 1937

Great Eastern Packing & Paperstock Corp., *Edam,* Rotterdam, 103 bls. bagging.
Ashuelot Paper Co., *Edam,* Rotterdam, 66 bls. bagging.
E. Butterworth & Co. Inc., *Edam,* Rotterdam, 35 bls. rags.
Pagel Horton & Co. Inc., *Argosy,* Sweden, 1,362 bls. wood pulp.
Price & Pierce, Ltd., *Argosy,* Sweden, 5,694 bls. unbleached sulphite.
Price & Pierce, Ltd., *Argosy,* Sweden, 500 bls. unbleached mechanical.
Price & Pierce, Ltd., *Argosy,* Sweden, 4,014 bls. unbleached sulphate.
E. J. Keller Co. Inc., *American Shipper,* ——, 64 bls. bagging.

PHILADELPHIA IMPORTS

WEEK ENDING SEPTEMBER 11, 1937

F. Stern, *Black Falcon,* Rotterdam, 48 coils old rope.
Castle & Overton, Inc., *Black Falcon,* Antwerp, 173 bls. rags.
E. J. Keller Co. Inc., *Black Falcon,* ——, 33 bls. rags.
E. J. Keller Co. Inc., *Vincent,* ——, 51 bls. paper stock.
J. T. Flannery, *Examiner,* Casablanca, 100 bls. rags.
Price & Pierce, Ltd., *Rydboholm,* ——, 300 bls. bleached sulphite.

BALTIMORE IMPORTS

WEEK ENDING SEPTEMBER 11, 1937

——, *Black Osprey,* Rotterdam, 122 bls. wood pulp boards.
——, *Black Osprey,* Rotterdam, 420 bls. wood pulp, 83 tons.
M. Sone, *City of Baltimore,* Hamburg, 724 bls. wood pulp.
Parsons & Whittemore, Inc., *City of Baltimore,* Hamburg, 528 bls. wood pulp.

NORFOLK IMPORTS

WEEK ENDING SEPTEMBER 11, 1937

Royal Manufacturing Co., *Black Osprey,* Antwerp, 118 bls. flax waste.
——, *McKeesport,* Liverpool, 69 bls. bagging.

MONTREAL IMPORTS

WEEK ENDING SEPTEMBER 11, 1937

Gottesman & Co. Inc., *Binna,* Sweden, 3,000 bls. sulphite.
Gottesman & Co. Inc., *Topdalsfjord,* Sweden, 20250 bls. sulphite.
Gottesman & Co. Inc., *Topdalsfjord,* Sweden, 6,300 bls. sulphate.

Lubrication in Paper Making

"Relation of Lubrication to Efficient Paper Mill Operation" is the title of the 40-page booklet just issued by the Texas Company. More than ever before, paper making equipment today needs lubricants capable of standing the strain of faster operation and permitting continuous production. The Texas Company offers a specific lubricant for each of the many precise requirements.

The pamphlet is devoted to an explanation of the entire operation of paper making, from the preparation of the raw materials to the final steps of winding, cutting and folding with special reference to lubrication in each of the processes.

Catalog of Technical Books

The 136-page spiral wire bound Catalog No. 4 listing and describing chemical, bacterial, engineering, electrical and general scientific and other technical books of American and British publishers, offered to technical workers, by the Chemical Publishing Company of N. Y., Inc., met with such a great demand that it is now out of print. Catalog No. 5 is now ready and will be mailed to any technical worker sending 10 cents in stamps or coin to cover mailing.

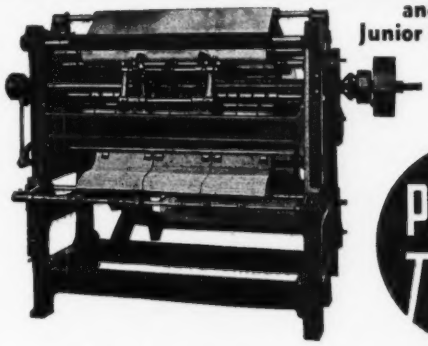
This catalog eliminates the necessity of filing and looking through catalogs of many technical publishers —thus saving a great deal of time and effort.

Synchro Diaphragm Control Valves

Describing their complete line of Synchro Diaphragm Control Valves, a new bulletin has been recently completed by the Bristol Company, Waterbury, Conn. Information is given regarding the constructional features, the operating characteristics, and the various types of Bristol's Synchro Diaphragm Valves and their application to typical installations, where temperature, pressure, liquid level, flow and humidity are controlled pneumatically. Data on sizes, dimensions and valve metals are also included. A copy of Bulletin No. 461 may be obtained upon request.

FOR FOLDING STANDARD SIZE

and Junior Sizes



PAPER TOWELS

full rotary-ball bearing interfolder

Simply constructed, the upkeep of this machine is next to nothing, although the guaranteed production is 25 cases per hour. Illustrated here is the standard three wide towel interfolder, but this machine can also be built so that it is one, two, three, four or five wide with production of 12 cases for single width up to approximately 40 cases on the five wide machine. Towels are slit to their proper size with a score cut slitter running on a hardened surface roll, which gives the ends a smooth shearlike cut. The cut-off mechanism is a full rotary mechanism making a saw tooth cut.

Complete details upon request.

Paper Converting Machine Co., Green Bay, Wis.

Designers and manufacturers of High Speed Rotary Folders for napkins, towels and toilet paper; Rotary printing presses for napkins, bags, envelopes; Creping Machines, bundling presses and special converting machinery.

THE DRAPER FELTS

All kinds and styles of Felts for all kinds and styles of Papers.

Write us about your Felt problems and let us help you reduce your Felt Costs—we will call anywhere at any time.

DRAPER BROS. COMPANY

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Woolen manufacturers since 1856

Special Train Service

FOR THE

TAPPI CONVENTION

(Technical Association of the Pulp and Paper Industry)

Savannah, Ga. – October 18-21

As approved by Mr. R.G. Macdonald, Secretary of the Association

—SPECIAL TRAIN—

leaves Penna. Sta., New York, southbound 2:30 P.M., Sunday, Oct. 17th, making scheduled stops at principal points between New York—Washington—Richmond. Ar. Savannah, 7 A.M., Mon. Oct. 18th, in ample time for opening sessions.

Splendid connections for New England passengers using New Haven's "Colonial" from Boston, New London, Springfield, Hartford, New Haven to Penna. Sta., N. Y. Air-conditioned equipment, Club-Lounge Car and diner serving all meals. Similar service northbound Oct. 21st from Brunswick, Ga., lv. 7:25 P.M., and Savannah, lv. 10:45 P.M. Ar. N.Y. 4:05 P.M. Direct connection at Wash. for New England points.

3 other fine daily trains from N.Y. to Savannah: The Tamiami, lv. 10:30 A.M., Palmetto Limited, lv. 2:25 P.M., Havana Special, lv. 10:10 P.M. **All equipment air-conditioned — Club-Lounge cars, etc.**

Go by train—a clean ride over a double-track, rock-ballasted railroad protected by automatic signals and train control. Enjoy the comfort of fast, smooth, safe travel. Low round trip fares available.

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Perforated Screens For Pulp and Paper Mills

Steel, Copper, Brass Bronze, Monel Metal and Other Alloys Punched for Centrifugal and Rotary Screens, Pulp Washers, Drainer Bottoms, Filter Plates, etc.

Charles Mundt & Sons

63 Fairmount Ave. Jersey City, N. J.

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, September 15, 1937.

The demand for paper in the wholesale markets continued good for the current week. With the exception of newsprint, which is moving in good volume on contract orders, the trade reports that many consumers who bought heavily before the upward revision in prices last spring, seem disposed to reduce their stocks to the minimum before entering the market again. As consumer requirements are now slightly under expectations, the wholesale markets are reflecting this lagging demand.

The book and bond paper markets report demand as fair and prices firm.

The box market is slightly slower than seasonable. Prices are strong for the lack of volume. The upturn in demand usually beginning in August was not present this year. In general all divisions of the paper trade are optimistic and look forward to a steadily increasing demand for all paper and paper products.

Chemical Pulp

The trade reports the chemical pulp market as fairly firm for the current week. The turnover in imported grades continues rather limited. This is said to be due to some extent to the slightly lower prices on domestic grades. Resale volume and the lull in the paper and box board trades throughout the country, are also stated to be factors.

Mechanical Pulp

The demand for mechanical pulp continues at about prevailing levels, with the volume of sales rather light for the current week. Prices in the general mechanical pulp market continue firm, with prices unchanged and at levels of the preceding week.

Old Rope and Bagging

The steady demand for old rope and bagging was continued during the current week. No change in prices are reported.

Rags

The domestic rag market continued steady, with prices firm and unchanged from the quotations of last week. The export demand is expected to increase volume this fall.

The prices of foreign rags were steady, with a firm market reported by the trade as due to heavy foreign demand and holding stocks for higher prices.

Waste Paper

The waste paper market continued steady at about the same price levels as the preceding week. The prices of the higher grades of mixed paper are firm, while trading in the lower grades is said in the trade to be marking time. Improvement in volume is expected to await a larger export demand.

Twine

A moderate demand for twines at prevailing prices was continued for the current week. The condition of the cotton twine market is unchanged with prices about on the level of the preceding week.

Low-Head Vibrating Screens

The Allis-Chalmers Manufacturing Company, Milwaukee, Wis., has just released a very attractive new 8 page bulletin No. 1478A on its line of low-head vibrating screens. It describes and illustrates these horizontal screens which on account of requiring a minimum amount of head room can usually be installed in existing plants as well as being especially desirable for new plants where their reduced head room results in reduced building height, reduction in length of elevators and conveyors with a corresponding saving in power costs. It not only tells of their economical operation but shows their sturdy and compact construction which includes a vibrating mechanism that may be mounted above or below the screen as may best suit the conditions. The bulletin includes size and dimension sheets for standard single, double and triple deck low head screens.

Paper Cartels Work Successfully

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 8, 1937—According to data which has just been released by the three Czechoslovak pulp and paper cartels, the situation in the domestic paper industry is the most favorable in its history, with production and sales exceeding those of the peak year of 1929. Total production of paper, not including newsprint, in May amounted to 0,090 metric tons which is an increase of 21.6 per cent over May 1936, when production totaled 16,520 tons. Paper production during the first five months of the current year amounted to 97,380 tons, as compared to 82,070 tons in the same period of 1936, an increase of 18.7 per cent.

Orville Mazanec Is Drowned

Orville Mazanec of Green Bay, Wis., who was about to leave for Honolulu to become superintendent of the converting plant of the Hawaiian Paper Company, was drowned last week while swimming in Lake Michigan at a north side bathing beach in Chicago, Ill. Another swimmer rescued his body, but resuscitation efforts by the Chicago police for 45 minutes failed to revive him. Mr. Mazanec was employed by the Hudson-Sharp Machine Company, Green Bay, Wis., for about 15 years, the last five in the engineering department. He resigned September 1 to take the Hawaiian position. He was 28 years old.

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BLEACHED SULPHITE AND SODA PULP.
BLEACHED AND UNBLEACHED KRAFT PULP.

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Covington, Virginia
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Cass, West Virginia

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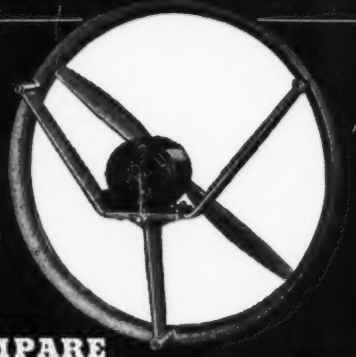

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PROPELLAIR TO DO IT

Pulp and Paper Mill Screens
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Perforations that are accurate in size
Any Metal Any Perforation

The Harrington & King PERFORATING Co.
5652 Fillmore St., Chicago, Ill., 114 Liberty St., New York, N.Y.

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, September 15, 1937.

BLANC FIXE—The blanc fixe market is steady, with prices remaining firm and unchanged at former levels. Quotations of pulp range from $42.50 to $45 per ton, in bulk. The powder is quoted at from 3½ to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER—The bleaching powder market continues firm. Prices are unchanged for the week at prevailing quotations. Bleaching powder is offered at from $2 to $2.25 per 100 pounds, in drums, at works.

CASEIN—The casein market is seasonably active. The demand continues good and prices are firm. Domestic standard ground casein is offered at 13½ cents per pound, while domestic finely ground casein is quoted at from 13½ to 14½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA—The demand for caustic soda continues good and prices are firm. Quotations for solid caustic soda range from $2.10 to $2.30. The flake and ground is quoted at from $2.50 to $2.70 per 100 pounds, in drums, at works.

CHINA CLAY—The china clay market continues active, with contract shipments moving in good volume. Imported china clay is quoted at from $14.50 to $25 per ton, ship side. The domestic clay market is strong. Prices of filler clay are quoted at from $6.50 to $12 per ton. Coating clay is quoted at from $11 to $22 per ton, all prices at mines.

CHLORINE—The demand for chlorine continues good and prices are firm at levels of the preceding week. Chlorine is quoted at $2.15 per 100 pounds, in single-unit tank cars, f.o.b., works.

ROSIN—The rosin market is firm. Paper making rosin is quoted at $7.82, and wood rosin at $8 per 280 pounds, gross weight, in barrels at Savannah. Seventy per cent rosin size is quoted at $3.60 per 100 pounds, in tank cars, f.o.b., shipping point.

SALT CAKE—The demand for salt cake continues good and prices are firm. Quotations range from $12 to $13; chrome salt cake at from $10 to $11, f.o.b., shipping point. Imported salt cake is quoted at $12, Gulf or Atlantic Seaboard, on dock.

SODA ASH—The soda ash market is seasonably active, with a good demand from paper mills. Prices remain at prevailing levels. Quotations on soda ash in car lots, at works, per 100 pounds, are as follows: in bulk, $.90; in bags, $1.05; and in barrels, $1.35.

STARCH—The demand for starch continues on a hand-to-mouth basis, in expectation that the large corn crop may result in slightly lower prices. Paper making starch is quoted at $3.45 per 100 pounds, in bags, and at $3.70 per 100 pounds, in barrels, car lots, f.o.b., Chicago.

SULPHATE OF ALUMINA—The sulphate of alumina market continues seasonably active, with contract shipments moving freely. Prices are firm. The commercial grades are quoted at from $1.25 to $1.60; iron free is quoted at from $2 to $2.25 per 100 pounds, in barrels, at works.

SULPHUR—The demand for sulphur continues good and prices are firm at prevailing levels. Annual contracts are quoted at $18 per long ton, f.o.b., cars at mines. Quotations on spot and nearby car lots, are at $21 per ton, all prices in car lots.

TALC—The demand for talc continues strong. Prices are firm. Quotations on domestic talc range from $15 to $18 per ton, Eastern mines.

Market Quotations

Paper

Tissues—Per Ream—

White No. 1	1.10	@	—
White No. 1 M. G.	1.07½	@	—
White No. 1½	.77½	@	—
White No. 2	.75	@	—
Anti-Tarnish M. G.	.77½	@	—
Colored	.90	@	—
Kraft	.77½	@	—
Manila	.75	@	—
Unbleached Toilet	2.90	@	3.30
Bleached Toilet	3.94	@	5.26

Paper Towels—

Unbleached	2.10	@	3.35
Bleached	3.30	@	3.70

Manila—

No. 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.00	@	5.25
No. 2 Wood	3.50	@	4.00

Fibre Papers—

No. 1 Fibre	4.25	@	5.50
No. 2 Fibre	4.00	@	4.75

(Delivered New York)

News, per ton—

Roll, contract	42.50	@	—
Sheets	47.50	@	—

Kraft—

No. 1 Northern	5.25	@	5.75
Standard	5.00	@	—
Southern	—	@	4.50
Machine glazed, plain, striped	—	@	5.00

Boards, per ton—

Chip	42.50	@	—
News	45.00	@	—
Sgl. Mla. Ll. Chip	55.00	@	—
Jute Lined Chip	55.00	@	—
White Pat. Coated	67.50	@	—
Kraft Liners	55.00	@	—
Binders Boards	75.00	@	80.00

The following are representative of distributors' resale prices:—

Rag Content Bonds and Ledgers—
White, Assorted Items,
Delivered in Zone 1:

	Bonds	Ledgers
100% Rag Ext. No. 1	$41.40@$48.50	$42.55@$50.00
100% Rag	32.80@ 38.50	33.95@ 39.75
85% Rag	.....	32.20@ 37.75
75% Rag	24.75@ 29.00	25.90@ 30.50
65% Rag	21.65@ 26.25	22.80@ 27.75
50% Rag	18.70@ 22.75	19.90@ 24.25
25% Rag	15.80@ 19.25	16.95@ 20.75

Regular Colors @ $1.50 cwt. extra.
Heavy Colors @ $3.00 cwt. extra

Sulphite Bonds and Ledgers—
White, Assorted Items,
Delivered in Zone 1:

	Bonds	Ledgers
No. 1	$9.35@$11.50	$10.55@$12.75
No. 2	8.50@ 10.25	9.65@ 11.75
No. 4	7.60@ 9.25	8.80@ 10.75

Regular Colors @ $1.50 cwt. extra.
Heavy Colors @ $3.00 cwt. extra.

Free Sheet Book Papers—
White, Cased Paper,
Delivered in Zone 1:

No. 1 Glossy Coated	$12.45	@$14.25
No. 2 Glossy Coated	10.80	@ 12.25
No. 3 Glossy Coated	9.65	@ 11.00
No. 4 Glossy Coated	9.05	@ 10.50
No. 1 Antique (water-marked)	9.05	@ 10.50
No. 2 Offset	8.35	@ 9.50
A Grade E. F.	8.20	@ 9.50
A Grade S. & S. C.	8.45	@ 9.75
B Grade E. F.	7.60	@ 8.75
B Grade S. & S. C.	7.85	@ 9.00
C Grade E. F.	7.30	@ 8.50
C Grade S. & S. C.	7.55	@ 8.75
D Grade E. F.	7.00	@ 8.25
D Grade S. & S. C.	7.25	@ 8.50

Ivory & India at $.50 cwt. extra.

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—Moist	35.00	@	36.00
Dry	40.00	@	42.00

(Delivered)

No. 1 Domestic and Canadian	36.00	@	37.50

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—			
Prime Bleached Sulphite	3.50	@	4.65
Prime Qualities—			
Easy-Bleaching Sulphite	3.50	@	4.00
Strong Unbleached Sulphite	3.00	@	3.65

(On Dock, Atlantic Ports)

Kraft Bleached	4.00	@	4.75
Kraft Light & Strong	3.00	@	3.75
Kraft No. 1	2.90	@	3.65
Kraft No. 2	2.50	@	2.75

(F.o.b. Pulp Mill)

Kraft Domestic	2.00	@	3.10

(Delivered)

Soda Bleached	3.25	@	—

Add 60 cents per short ton, dock charges, for Albany; $2.00 for Lake Ports East and $3.00 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	9.00	@	9.25
Silesias, No. 1	6.75	@	7.00
New Unbleached	9.25	@	9.50
Blue Overall	7.25	@	7.50
Fancy	3.75	@	4.25
Washables	2.75	@	3.25
Mixed Khaki Cuttings	4.25	@	4.50
O. D. Khaki Cuttings	4.75	@	5.00

Old Rags

White, No. 1—			
Repacked	3.75	@	4.25
Miscellaneous	3.00	@	3.25
White, No. 2—			
Repacked	2.60	@	2.85
Miscellaneous	2.00	@	2.25
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.90	@	2.00
Roofing Rags—			
No. 1	1.55	@	1.65
No. 2	1.40	@	1.50
No. 3 (bagging)	.90	@	1.00
No. 4	.90	@	1.00
No. 5A	.75	@	.85

Foreign Rags

New Rags

New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	@	2.20
New Light Silesias	Nominal		
Light Flannelettes	Nominal		
New White Cuttings	Nominal		
New Light Oxfords	Nominal		
New Light Prints	3.00	@	3.50

Old Rags

No. 1 White Linens	7.50	@	8.50
No. 2 White Linens	6.50	@	7.50
No. 3 White Linens	4.50	@	5.50

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Brown, Red and Yellow
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MT. VERNON EXTRA — RICHLAND TRIPLEX

No. 4 White Linens	2.25	@	3.25
No. 1 White Cotton	4.25	@	4.75
No. 2 White Cotton	3.25	@	3.75
No. 3 White Cotton	2.50	@	3.00
No. 4 White Cotton	1.90	@	2.20
Extra Light Prints	2.00	@	2.40
Ord. Light Prints	1.75	@	2.15
Med. Light Prints	1.55	@	1.95
Dutch Blue Cottons	2.25	@	2.50
French Blue Linens	3.00	@	—
Checks and Blues	2.00	@	—
Linsey Garments	2.25	@	2.35
Dark Cottons	2.00	@	—
Old Shopperies	1.75	@	—
New Shopperies	1.75	@	—
French Blues	2.25	@	2.50

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	2.35	@	2.50
Domestic	2.25	@	2.35
Wool Tares, light	1.75	@	1.85
Wool Tares, heavy	2.35	@	2.45
Bright Bagging	1.70	@	1.75
Manila Rope—			
Foreign	4.75	@	5.00
Domestic	5.00	@	5.25
Jute Strings	2.75	@	3.00
Sisal Strings	2.60	@	2.75
Mixed Strings	Nominal		

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	3.10	@	3.25
Ordinary Hard White No. 1	2.60	@	2.70
Hard White No. 2	2.40	@	2.50
Soft White No. 1	2.30	@	2.40
Flat Stock—			
Stitchless	1.50	@	1.55
Overissue Mag	1.50	@	1.55
Solid Flat Book	1.20	@	1.25
Crumbled No. 1	.85	@	.95
Ledger Stock	1.55	@	1.60
New B. B. Chips	.45	@	.50
Manila—			
New Env. Cut	2.15	@	2.25
New Cuttings	1.65	@	1.75
Old Kraft Machine—			
Compressed bales	1.55	@	1.65
News—			
No. 1 White News	1.45	@	1.55
Strictly Overissue	.65	@	.75
Strictly Folded	.42½	@	.47½
No. 1 Mixed Paper	.45	@	.50

Twines

(F. o. b. Mill)

(Soft Fibre)			
Coarse Polished—			
India	.16	@	.18½
White Hemp	.17	@	.20½
India Compress	.16½	@	.17
Fine Polished—			
Fine India	.22	@	.24
Unpolished—			
Box	.11¾	@	.12¼
Paper Makers	.11½	@	.13¾
Tube Rope	.12½	@	.15¾
Wall Paper	.13½	@	.14¾
Wrapping	.17	@	.21
Soft Fiber Rope	.15¾	@	—
(Hard Fibre)			
Medium Java	.13½	@	.14
Mex. Sisal	.12	@	.16
Manila	.21	@	.28
Domestic	4.25	@	4.50
Transmission Rope	2.00	@	2.25
Jute Rope	1.85	@	2.12½
Soft Jute Strings	2.00	@	2.50
Jute Carpet Threads	1.75	@	2.00
Gunny No. 1			
Foreign	2.35	@	2.40
Domestic	2.10	@	2.15
Bleachery Burlap	4.00	@	4.25
Scrap Burlap—			
Foreign	2.15	@	2.25
Domestic	1.75	@	1.85
Scrap Sisal	2.25	@	2.30
Scrap Sisal for Shredding	2.40	@	2.50
Wool Tares, heavy	—	@	2.25
New Burlap Cuttings	2.45	@	3.00
Aust. wool pouches	3.25	@	3.50
Heavy bailing bagging	2.50	@	2.70
Paper Mill Bagging	1.70	@	1.75
Bagging No. 2	1.00	@	1.10

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.03½	@	.03¾
New White No. 1	.08¼	@	.08½
New White No. 2	.06	@	.06½
New Light Flannelettes	—	@	.06½
Silesias No.	—	@	.06½
New Black Silesias	.04¼	@	.04½
Soft Unbleached	.09	@	.09¼
Blue Cheviot	.07¼	@	.07½
Fancy	.03¾	@	.04
Washable	.03	@	.03¼
Cottons—According to grades—			
Blue Overalls	.07	@	.07¼
New Black, soft	.04¼	@	.04½
Khaki Cuttings	.04½	@	.04¾
O. D. Khaki	.04¾	@	.05
Corduroy	.03¼	@	.03½
New Canvas	.07¾	@	.08¼
B.V.D. Cuttings	.08¾	@	.09

Domestic Rags (Old)

(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	—	@	2.75
Miscellaneous	2.50	@	2.75
White No. 2—			
Repacked	1.90	@	2.00
Miscellaneous	2.00	@	2.25
Twos and Blues	1.75	@	2.00
Third and Blues—			
Repacked	1.37½	@	1.75
Miscellaneous	1.25	@	1.62½
Black Stockings	3.90	@	4.00
Roofing Stock—			
No. 1	1.40	@	1.50
No. 2	1.30	@	1.35
No. 3	1.05	@	1.15

Foreign Rags

(F. o. b. Boston)

Dark Cottons	1.65	@	1.85
Dutch Blues	3.00	@	3.15
New Checks and Blues	2.85	@	3.00
Old Fustians	3.00	@	3.25
Old Linsey Garments	2.15	@	2.50
New Silesias	6.50	@	7.00

PHILADELPHIA

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	—	@	.08
New White, No. 2	.04½	@	.05
Light Silesias	.05½	@	—
Silesias, No. 1	—	@	.05½
Black Silesias, soft	.03	@	.03½
New Unbleached	.08	@	.08½
Washable, No. 1	.02¼	@	.02½
Blue Overall	.05½	@	.06
Cottons—According to grades—			
Washable, No. 2	—	@	.02
New Blue	.01¾	@	.02
Fancy Percales	—	@	.03½
New Black Soft	.03	@	.03½
New Light Seconds	—	@	.05½
New Dark Seconds	1.25	@	1.50
Khaki Cuttings—			
No. 1 O. D.	.04	@	.04½
No. 2 Mixed	—	@	.03
Corduroy	.02¼	@	.03
New Canvas	.06½	@	.07
New Black Mixed	.02	@	.02¾

Domestic Rags (Old)

White No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	2.75	@	3.25
Thirds and Blues—			
Miscellaneous	2.00	@	2.25
Repacked	2.25	@	2.50
Black Stockings (Export)	4.50	@	5.00
Roofing Stock—			
Foreign No. 1	1.75	@	2.00
Domestic No. 1	1.50	@	1.70
Domestic No. 2	1.30	@	1.40
Roofing Bagging	—	@	1.25

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.80	@	2.00
Domestic	2.00	@	2.25
Manila Rope	4.25	@	4.50
Sisal Rope	2.00	@	2.25
Mixed Rope	1.00	@	1.10
Scrap—			
No. 1	1.75	@	2.00
No. 2	1.00	@	1.25
Wool Tares, heavy	3.25	@	3.50
Mixed Strings	1.00	@	1.10
No. 1 New Light Burlap	3.00	@	3.50
New Burlap Cuttings	2.00	@	2.25

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.55	@	2.75
No. 2 Hard White	2.40	@	2.55
No. 1 Soft White	2.40	@	2.55
No. 2 Soft White	1.50	@	1.75
No. 1 Mixed	.80	@	.90
Solid Ledger Stock	1.75	@	1.85
Ledger Stock, white	1.60	@	1.70
Ledger Stock, colored	1.35	@	1.45
No. 1 Books, heavy	1.05	@	1.10
Manila Cuttings	1.75	@	1.85
Print Manila	.50	@	.55
Container Manila	.45	@	.50
Kraft Paper	1.30	@	1.40
No. 1 Mixed Paper	.35	@	.45
Straw Board Chip	.40	@	.45
Binders Board Chip	.40	@	.45
Corrugated Board	.50	@	.55
Overissue News	.60	@	.65
Olds Newspapers	.40	@	.45

BOSTON

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.25	@	2.40
No. 1 Soft White	1.85	@	2.15
No. 2 Mixed	.75	@	.80
Solid Ledger Books	1.50	@	1.75
Overissue Ledger Stock	1.30	@	1.50
Mixed Ldgers	.85	@	.90
No. 1 Books, heavy	1.00	@	1.10
No. 1 Books, light	.65	@	.75
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.60	@	1.70
Manila Env. Cuttings, extra quality	2.20	@	2.30
No. 1 Old Manila	.95	@	1.00
White Blank News	1.30	@	1.40
No. 1 Kraft	1.75	@	—
Mixed Papers	.42½	@	.47½
Print Manila	.65	@	.70
Container Manilas	.27½	@	—
Old Newspapers	.52½	@	.57½
Overissue News	.60	@	.65
Box Board Chips	.35	@	.40
Corrugated Boxes	.62½	@	.67½
Kraft corrugated boxes	1.20	@	1.22½
Screening Wrappers	.60	@	.65

Bagging

(F. o. b. Boston)

Manila Rope—			
Foreign	4.25	@	4.40

CHICAGO

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope Cuttings	3.30	@	3.40
No. 1 Hard White	2.60	@	2.70
No. 1 Soft White	2.10	@	2.15
Ledger & Writings	1.40	@	1.50
Solid Books	1.25	@	1.30
Blanks	1.50	@	1.65
Krafts	1.00	@	1.25
New Kraft Cuts	1.80	@	2.00
Manila Env. Cuts	2.20	@	2.35
Ex. No. 1 Manila	2.20	@	2.35
Print Manila	1.70	@	1.80
Overissue News	.80	@	.90
Old Newspapers—			
No. 1 Folded News	.80	@	.90
No. 1 Mixed Paper	.80	@	.90
Roofing Stocks—			
No. 1	2.00	@	2.25
No. 2	1.85	@	2.00

TORONTO

Paper

Bonds and Ledgers

Delivered

No. 1 White	.35½	@	.36½
No. 1 Tints	.36½	@	.37½
No. 2 White	.26½	@	—
No. 2 Tints	.27½	@	—
No. 4 White	—	@	.1550
No. 4 Tints	.16	@	.1650
No. 5 Bond—White	.11.35	@	—
No. 5 Bond—Tints	.12.35	@	—
No. 5 Bond—Golden Rod	.13.35	@	—
No. 5 Ledger—White	.1185	@	—
No. 5 Ledger—Tints	.1285	@	—
No. 6 Bond—White	.10.75	@	—
No. 6 Bond—Tints	.11.25	@	—
No. 6 Bond—Golden Rod	.12.75	@	—
No. 7 Bond—White	9.10	@	—
No. 7 Bond—Tints	9.60	@	—
No. 7 Bond—Golden Rod	.11.10	@	—
Book—			
No. 1 M. F.	7.10	@	7.35
No. 2 M. F.	6.85	@	7.20
No. 3 M. F.	5.60	@	6.20
No. 1 S. C.	7.60	@	7.85
No. 2 S. C.	7.10	@	7.35
No. 3 S. C.	6.10	@	6.35
No. 1 Coated and Litho	.12.50	@	—
No. 2 Coated and Litho	.11.00	@	—
No. 3 Coated and Litho	9.50	@	10.00
Coated tinted	.13.00	@	13.50
Wrapping—delivered—			
Rag Brown	4.85	@	5.55
White Wrap	4.00	@	—
"B" Manila	4.90	@	6.25
No. 1 Manila	5.50	@	7.00
Fiber	5.50	@	—
Kraft, No. 2	5.50	@	—

(F. o. b. Cars, Toronto)

News, per ton—			
Rolls (contract)	38.50	@	—
Sheets	45.50	@	—

Pulp

Ground wood	32.00	@	—
Unbleached Sulphite	59.00	@	—
Book (Class 1)	71.00	@	—
Writing (Class 2)	72.00	@	—
Select (Class 3)	73.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	2.50	@	—
Soft White	2.15	@	—
White Blk. News	1.25	@	1.40
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.00	@	—
Light and Crumpled Book Stock	.85	@	—
Ledgers and Writings	1.20	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	.65	@	—
Kraft	1.00	@	1.70
News and Scrap—			
Strictly Overissue	.65	@	—
Strictly Folded	.60	@	—
No. 1 Mixed Paper	.50	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.09	@	.09¼
Fancy Shirt Cuttings	.03½	@	.03¾